

TEXAS AGRICULTURAL EXPERIMENT STATION

A. B. CONNER, DIRECTOR

College Station, Texas

BULLETIN NO. 607

September 1941

COMMERCIAL FERTILIZERS IN 1940-41

G. S. FRAPS, T. L. OGIER, AND S. E. ASBURY

DIVISION OF CHEMISTRY



T. O. WALTON, President

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS

9,000 Copies

[Blank Page in Original Bulletin]

This is the annual Fertilizer Control Bulletin. It contains statistics regarding fertilizers sold in Texas, information regarding the fertilizer law, and analyses of samples of the fertilizer sold by different manufacturers. The extent to which the various manufacturers are coming up to their guarantee is shown.

The total sales of fertilizer in Texas for 1940-41 were 129,578 tons. In 1939-40 the sales were 116,307 tons. In 1938-39 they were 93,115 tons. Cottonseed meal sold as a feed but used as a fertilizer was not included in these totals. Sales of fertilizer were about 11% more than last year. Practically all the sales of mixed fertilizers were confined to about 20 analyses.

Tables are given showing the extent to which the various fertilizer manufacturers met or exceeded their guarantees. The cost of nitrogen and phosphoric acid was slightly less in 1940-41 than in 1939-40 while that of potash was slightly more.

The subjects of vitamin B 1 and water culture are discussed and other information is given about fertilizers.

C O N T E N T S

	Page
Introduction	5
Explanation of Terms	5
Information on the Fertilizer Bag and Tag.....	6
How to Calculate the Valuation.....	6
Fertilizer Analysis to be Sold in 1941-42.....	7
Quantity Sold	8
Quantity of Sales by Grades.....	8
Quantity of Cottonseed Meal Used as a Fertilizer.....	9
Composition and Selling Prices of Different Grades of Fertilizer.....	3
Cost of Plant Food.....	10
Relation of Cost to Concentration of Fertilizers.....	12
Comparing Costs of Fertilizer.....	13
Free Analysis	13
Analysis of Fertilizers, 1940-41.....	14
Relation of Valuation Guaranteed to Valuation Delivered.....	14
Averages Below Guarantee.....	15
Fillers	15
Non-Acid Forming Fertilizers.....	15
Investigations Under the Fertilizer Law.....	17
Relation to Experiment Station Work.....	17
Colloidal Mineral Phosphate	17
Sulphur, Gypsum, and Manganese	18
Greensand	20
Polyhalite and Sewage Sludge	20
Fertilizing Value of Spent Phosphate Catalyst.....	20
Vitamin B ₁	20
Fertilizers for Water Culture.....	21
Information Regarding the Use of Fertilizer.....	21
Summary	22

COMMERCIAL FERTILIZERS IN 1940-41

G. S. Fraps, State Chemist, T. L. Ogier, Associate State Chemist
and S. E. Asbury, Assistant State Chemist

Fertilizer laws require fertilizer to be correctly labeled so that the purchaser can know what he is getting. The object of the fertilizer law is to protect the farmer or other users of fertilizer against misrepresentation of the composition or fertilizing value of the fertilizer as well as manufacturers and dealers against unfair competition due to such misrepresentation.

The first Texas fertilizer law was passed in 1899. It was revised and amended in 1911. The results of the fertilizer inspection have been published in bulletins of the Texas Agricultural Experiment Station regularly since 1906. This is the thirty-ninth Fertilizer Control Bulletin. It contains statistics, definitions of terms, a report on the analyses made in enforcing the provisions of the fertilizer law, and information regarding the use of fertilizers.

EXPLANATION OF TERMS

Nitrogen refers to the total nitrogen in the fertilizer. It is necessary in proper amounts for the development of all parts of the plant, but an excess of nitrogen delays maturity and is liable to promote growth of stalk and leaves at the expense of fruit. Nitrogen is needed by many Texas soils, especially the sandy soils in the eastern and northern parts of the State. Since nitrogen is used in comparatively large quantities by plants and is, to some extent, washed from the soil, it is usually the first element to become depleted from a fertile soil.

Available phosphoric acid is the phosphoric acid (P_2O_5) in fertilizers which can be taken up quickly by plants. Phosphoric acid promotes the fruiting of plants, though it is also necessary for the development of all parts of the plant.

Total phosphoric acid is the entire quantity of the phosphoric acid (P_2O_5) present, whether highly available or not. A guarantee of total phosphoric acid in place of available is made in bone, tankage, rock phosphate, and basic slag.

Potash guaranteed in a fertilizer is required by the law to be soluble in water. Potash, like nitrogen, is needed by all parts of the plant, but especially by stalk and leaves. An excess of potash delays maturity and is liable to promote growth of the stalk and leaves at the expense of the fruit. When potash is abundantly supplied, plants may take up more than they need. Potash is present in soils more abundantly than phosphoric acid.

Valuation per ton represents the approximate average cost of the plant food in the unmixed fertilizer, at retail. It is usually smaller than the price at which the mixed fertilizer is sold, but since it is an average, it may be greater than the prices of some of the unmixed fertilizer materials. The selling price includes cost of mixing, bags, transportation, the profit of the manufacturer, if any, and that of the dealer. The valuations are decided on about September 1, and the prices often change before the chief active fertilizer season, which is February to April in Texas. The valuation sums the value of the three plant foods shown in the analysis into a single figure, and is convenient for this purpose. The fertilizer law permits a deficiency of less than ten per cent in one plant food to be compensated by an excess of another, but if the valuation is four per cent less than the guaranteed valuation, a rebate must be paid to the purchaser. The valuation found compared with the valuation guaranteed shows whether or not the fertilizer as a whole is better or poorer than the guarantee as a whole. The following valuations were used in 1940-41:

	Cents per pound
Nitrogen	12.0
Available phosphoric acid	6.5
Total phosphoric acid in Thomas phosphate, tankage, and bone meal	4.5
Total phosphoric acid in rock phosphate	1.5
Potash	6.5

Names of fertilizers. Fertilizers are frequently named by numbers, such as a 4-8-4 fertilizer, a 6-12-6 fertilizer and so on. In such names, the first figure stands for the percentage of nitrogen, the second for the percentage of available phosphoric acid, and the third for the percentage of water-soluble potash. This is a short and accurate method of naming fertilizers.

Information on the Fertilizer Bag and Tag

A fertilizer tax tag is required to be placed on every bag of fertilizer before it is offered for sale or sold. The guaranteed analysis of the fertilizer is required by law to be printed on the bag or on the tag attached to the bag, so that the purchaser can see what he is buying. Total phosphoric acid may be guaranteed for bone or tankage instead of available phosphoric acid. A guarantee of total phosphoric acid is required in Thomas phosphate or rock phosphate. The information required on the package is as follows:

Net weight
Name of fertilizer in full
Name and address of manufacturer
Guaranteed analysis:
 Nitrogen, per cent
 Available phosphoric acid, per cent
 Potash, per cent

How to Calculate the Valuation

The valuation of a fertilizer is calculated by multiplying the composition by the valuation of each unit of plant food and adding the products.

A unit is one per cent of a ton, or 20 pounds; so if the valuation of nitrogen is 12 cents a pound, the valuation of a unit is $12 \times 20 = \$2.40$. The valuation of a unit of available phosphoric acid at 6.5 cents a pound would be $6.5 \times 20 = \$1.30$; the valuation for a unit of potash at 6.5 cents a pound would be \$1.30. The following is an example of a calculation at the prices given above:

Valuation of 4-8-4 Fertilizer		
Nitrogen	4 x \$2.40 =	\$ 9.60
Available phosphoric acid	8 x \$1.30 =	\$10.40
Potash	4 x \$1.30 =	\$ 5.20
Total valuation per ton		\$25.20

Fertilizer Analyses to be Sold in 1941-42

The grades of fertilizer sold in Texas are limited in number. This standardization aids the farmers to become familiar with the different kinds of fertilizer, enables him to decide more readily on the proper kind to be used, enables the agricultural worker to make definite recommendations, and reduces the cost of manufacture and handling, thereby also reducing the cost to the consumer. At a conference with fertilizer manufacturers doing business in Texas, Louisiana, and Oklahoma in July 1941, grades of mixed fertilizer were adopted for these states. This was the seventeenth such conference for Texas manufacturers, and the ninth joint conference. Changes are made at practically every meeting. Grades which have little sale may be dropped, and new or experimental grades may be added. On account of war conditions, the grades 6-24-0 and 12-18-0 were added. The grade 3-10-3 was dropped, because 4-12-4 and 5-15-5 have the same ratio of plant food.

The grades adopted for Texas are given in Table 1.

Table 1. Grades of fertilizer adopted for sale in Texas September 1, 1941 to August 31, 1942

0-12-4	6-8-4	10-20-10
3-10-0	6-8-8	11-48-0
4-8-4	6-9-3	12-18-0
8-8-6	6-10-7	15-0-14
4-8-10	6-12-6	16-20-0
4-10-0	6-24-0	16-0-0
4-12-4	8-8-8	20-0-0
5-15-0	10-0-10	42-0-0
5-15-5	10-10-0	

MATERIALS

Activated sludge	Muriate of potash, 50%
Bat guano	Nitrate of soda, 16%
Bone meal	Nitrate of soda and potash 15-0-14
Calcium nitrate	Sheep manure
Castor pomace	Sulphate of ammonia, 20.5%
Cottonseed meal	Sulphate of potash, 48%
Cyanamid, 21%	Superphosphate, 18%
Cyanamid, 22%	Superphosphate, 20%
Ground phosphate rock	Superphosphate, 32%
Kainit, 20%	Superphosphate, 45%
Lawn and Garden	Soft phosphate with colloidal clay
Manure Salts, 22, 25, and 30%	Tankage

Quantity Sold

The quantities of commercial fertilizer sold in Texas for several seasons, from September 1 to August 31, are given in Table 2. These are the actual sales as reported by the manufacturers, and not the tag sales. The tag sales are always a little larger than the actual sales. The sales in 1940-41 were about 11% higher than last season. The largest sales so far made in Texas were 187,215 tons during the season 1928-29. Fertilizer statistics for a number of years to August 31, 1926, including sales by counties, have been published in Bulletin 350, and from 1926 to 1938 in Bulletin 572.

Table 2. Fertilizers sold in Texas, (not including cottonseed meal sold as feed but used as fertilizers).

	Tons
1905-06	13,500
1910-11	52,985
1913-14	77,400
1914-15	17,500
1919-20	56,700
1920-21	14,850
1921-22	33,000
1922-23	73,300
1923-24	126,179
1924-25	97,719
1925-26	121,747
1926-27	79,863
1927-28	139,126
1928-29	187,215
1930-31	64,424
1932-33	30,845
1933-34	47,204
1935-36	60,016
1936-37	84,936
1937-38	79,640
1938-39	93,115
1939-40	116,307
1940-41	129,578

Quantity of Sales by Grades

Table 3 contains the sales of fertilizer by grades for four seasons arranged in order according to sales in the season 1940-41. Sales of 4-8-4 fertilizer are highest of all. The 4-12-4 comes second, the 4-8-6 comes third and the 6-10-7 comes fourth. These are in the same order as they were the last two years.

The tonnage of cottonseed meal reported in Table 3 includes only that tagged with fertilizer tax tags and sold as a fertilizer.

Table 3. Fertilizer sales by grades in order of tonnage for 1940-41.

	Tons	Tons	Tons	Tons
	1940-41	1939-40	1938-39	1937-38
4-8-4	34,477	30,705	24,171	18,743
4-12-4	16,781	15,285	11,675	10,345
4-8-6	13,085	11,775	9,402	8,107
6-10-7	8,725	7,649	4,708	4,901
6-8-4	7,327	6,790	5,661	4,597
Superphosphate, 20%	5,681	4,040	3,537	3,377
6-12-6	5,483	4,265	3,846	3,643
4-10-0	4,697	4,011	3,827	2,137
3-10-3	3,059	3,650	3,345	2,961
Sulphate of ammonia	2,790	3,064	2,283	2,548
6-8-8	2,527	1,767	882	0
Superphosphate 18%	2,484	2,543	2,986	3,516
Cyanamid	2,254	3,063	917	919
6-9-3	2,164	1,767	1,373	1,055
Bone meal	2,044	1,563	1,604	1,342
3-10-0	2,030	1,676	1,834	826
Nitrate of soda, 15% & 16%	1,742	1,641	1,098	1,048
Lawn and garden fertilizer	1,582	1,243	1,020	957
4-8-10	1,456	1,084	862	678
11-48-0	1,149	2,060	1,905	1,585
16-20-0	1,044	1,462	1,338	1,606
5-15-5	1,014	872	794	1,525
42-0-0 (Urea meal)	848	171	86	0
Superphosphate, 45%	647	419	265	150
0-12-4	549	633	114	247
10-10-0	539	276	213	110
Soft phosphate with colloidal clay	523	130	119	40
5-15-0	453	79	204	216
Superphosphate, 32%	368	427	898	678
10-0-10	359	248	144	106
Phosphate rock (ground)	340	130	0	0
Tankage, bat guano & activated sludge	323	238	214	134
10-20-10	293	271	275	311
Muriate of potash, 50%	224	166	165	207
Nitrate of soda and potash 15-0-14	114	0	3	0
8-8-8	112	0	0	0
Soil sulphur	106	109	0	0
Kainit, 20%	50	140	156	179
Sulphate of potash, 48%	48	15	29	44
6-24-0	21	0	0	0
Sheep manure	20	35	15	16
12-18-0	19	0	0	0
Cottonseed meal	15	5	179	158
Manure salts, 30%	12	12	7	5
10-20-0	0	0	8	14
Calcium nitrate	0	828	320	0
Total	129,578	116,307	93,115	79,640

Composition and Selling Prices of Different Grades of Fertilizer

Table 4 contains the average composition, the guaranteed valuation, the valuation found by analysis, and the average retail selling prices per ton, of various grades of fertilizers. The average retail selling price is the average of the cash retail prices furnished to the fertilizer inspector by the dealers. The prices of the same fertilizer may be different in different towns on account of differences in cost of transportation or for other causes. The retail price includes handling costs, carrying charges, and the dealer's profits, as well as the cost of the plant food used in the materials from which the fertilizer is made.

The average valuations found by analysis (Table 4) exceed the guaranteed valuation in almost every case. The exceptions are 4-8-10, 6-8-4, 6-8-8, 6-10-7, 10-20-10, sulphate of potash, and 45% superphosphate. In most of these, however, the average valuations found by analysis are only slightly below the valuations guaranteed.

Table 4. Average composition, valuation and selling prices of grades of fertilizer. 1940-41

Grades	Number aver- aged	Nitro- gen per cent	Available Phos. acid per cent	Potash per cent	Guaran- teed valuation per ton	Valuation found per ton	Selling price per ton
0-12-4	3		12.09	4.12	\$ 20.80	\$ 21.06	\$
3-10-0	3	2.45	11.87		20.20	21.31	24.67
3-10-3	43	3.12	10.12	3.28	24.10	24.91	27.14
4-8-4	196	4.06	8.22	4.06	25.20	25.70	27.83
4-8-6	116	4.05	8.14	5.91	27.80	27.98	30.46
4-8-10	14	4.07	8.17	9.64	33.00	32.91	33.27
4-10-0	18	4.15	9.85		22.60	22.75	28.10
4-12-4	141	4.11	11.87	4.13	30.40	30.65	31.05
4-12-4 (lawn and garden)	7	4.34	11.07	4.41	30.40	30.47	55.67
5-9-4 (lawn and garden)	1	5.37	10.38	4.51	28.90	32.42	
5-15-0	7	5.12	15.01		31.50	31.80	35.17
5-15-5	20	5.18	14.62	5.10	38.00	38.07	37.75
6-2-0 (lawn and garden)	2	6.01	2.30		17.00	17.41	45.00
6-8-4	66	5.89	8.04	4.09	30.00	29.97	32.59
6-8-4 (lawn and garden)	2	5.95	8.96	4.40	30.00	31.65	44.25
6-8-8	28	5.95	7.98	7.68	35.20	34.63	35.44
6-9-3	37	5.91	9.08	3.30	30.00	30.26	30.70
6-10-4 (lawn and garden)	1	8.91	11.21	3.61	32.60	40.64	
6-10-7	109	5.96	9.98	7.00	36.50	36.38	35.93
6-12-6	94	6.06	11.92	6.07	37.80	37.95	35.98
8-7-3 (lawn and garden)	1	10.45	9.75	4.17	32.85	43.18	
8-8-8	5	7.95	8.48	7.83	40.00	40.30	39.00
10-0-10	1	10.08		10.03	37.00	37.23	
10-6-4 (lawn and garden)	2	10.34	6.52	4.19	37.00	38.73	55.00
10-10-0	2	9.34	11.22		37.00	37.00	39.00
10-10-0 (lawn and garden)	1	10.68	9.14		37.00	37.51	55.00
10-20-10	4	8.95	19.38	9.89	63.00	59.54	57.67
11-48-0	8	11.12	48.41		88.80	89.61	67.50
16-20-0	7	15.98	20.46		64.40	64.94	54.33
Ammonium sulphate 20.8%	4	20.89			49.92	50.14	47.75
Bat Guano	1	10.75	3.79	1.27	29.20	32.38	60.00
Cyanamid 21%	4	21.13			50.40	50.72	45.00
Kainit 20%	1			20.42	26.00	26.55	29.00
Manure Salts	1			30.88	39.00	40.14	
Nitrate of Soda	6	16.49			38.40	39.58	44.44
Raw Bone Meal	4	3.99	21.32*		28.68	28.76	33.15
Sheep Manure	1	1.80	1.66	3.87	8.70	11.51	47.50
Soft Phosphate with Colloidal Clay with nitrogen	1	4.50	.88		8.50	11.94	42.00
Sulphate of Ammonia 20.5%	18	20.69			49.20	49.65	46.36
Sulphate of Potash	1			47.39	62.40	61.61	63.33
Superphosphate 18%	7		19.50		23.40	25.35	23.00
Superphosphate 20%	18		20.22		26.00	26.28	24.47
Superphosphate 32%	3		32.07		41.60	41.69	40.00
Superphosphate 45%	2		44.86		58.50	58.32	53.00
Uramon 42% N.	4	42.96			100.80	103.10	80.00
*Total phosphoric acid							

Cost of Plant Food

Table 5 contains the calculated retail cost of a pound of nitrogen, of available phosphoric acid, and of potash, in cents per pound, as calcu-

lated from the cash selling prices per ton given in Table 3 and the guaranteed composition. For the purpose of these calculations it was assumed that the prices were in the same ratio as the valuations. As the price of the same fertilizer may be different in places, these figures are not correct for any particular locality, but represent averages only, and are for purposes of comparison. The prices were collected by the inspectors from retail merchants handling fertilizers. Grades used extensively near the factories might average a lower price than those used at a distance on account of lower transportation costs. The fertilizers with the lowest cost of plant food are given first in the table.

Fertilizers for lawns, gardens and flowers can be secured at a reasonable price but a few of the fertilizers in small packages are sold at a price of hundreds or even thousands of dollars per ton. The cost can be easily estimated from the price and the weight of fertilizer in the package.

Table 5. Approximate average cost of plant food in cents per pound.
Arranged in order of increasing cost 1940-41

Grades	Nitrogen	Available Phosphoric Acid	Potash
11-48-0	9.12	4.94	
Uramon 42% N	9.53		
16-20-0	10.13	5.49	
Cyanamid	10.72		
Superphosphate 45%		5.89	
10-20-10	10.93	5.95	5.95
Superphosphate 20%		6.12	
Sulphate of Ammonia 20.5%	11.30		
6-12-6	11.42	6.19	6.19
Ammonium Sulphate 20.8%	11.43		
Superphosphate 32%		6.25	
8-8-8	11.70	6.34	6.34
Superphosphate 18%		6.39	
6-10-7	11.81	6.40	6.40
5-15-5	11.92	6.46	6.46
6-8-8	12.08	6.55	6.55
4-8-10	12.10	6.55	6.55
Sulphate of Potash			6.60
4-12-4	12.25	6.64	6.64
6-9-3	12.28	6.65	6.65
10-10-0	12.65	6.85	
6-8-4	13.03	7.06	7.06
4-8-6	13.15	7.12	7.12
4-8-4	13.25	7.18	7.18
Kainit 20%			7.25
5-15-0	13.40	7.26	
3-10-3	13.51	7.32	7.32
Raw Bone Meal	13.87	5.20*	
Nitrate of Soda 16%	13.88		
3-10-0	14.65	7.94	
4-10-0	14.92	8.08	
6-8-4 Lawn and Garden	17.70	5.59	9.59
10-6-4 Lawn and Garden	17.83	9.66	1.66
10-10-0 Lawn and Garden	17.83	9.66	
4-12-4 Lawn and Garden	21.97	11.90	11.90
Bat Guano	24.66	13.36	13.36
6-2-0 Lawn and Garden	31.76	17.21	
Soft Phosphate with Colloidal Clay with Nitrogen	59.29	32.12	
Sheep Manure	65.52	35.49	35.49

* Total phosphoric acid.

Cost of Nitrogen. The 11-48-0 was the cheapest source of nitrogen, Uramon was next, 16-20-0 third, Cyanamid came fourth and 10-20-10 fifth. Pulverized sheep manure was the most expensive source of nitrogen, but is chiefly used for lawns or gardens. Of the farm fertilizers, 4-10-0 was the most expensive source of nitrogen, followed by 3-10-0 nitrate of soda, raw bone meal, and 3-10-3 as shown in Table 5. The cost of nitrogen was greater in most of the mixed fertilizer than in sulphate of ammonia or cyanamid because it costs to mix the fertilizers. The lowest-priced nitrogen in the mixed fertilizers was in the 11-48-0, followed in order by the 16-20-0, 10-20-10, 6-12-6, and 8-8-8. The 4-8-4, the most popular fertilizer, was also high in price. Nitrogen was lower in price than last season in some fertilizers and higher in others. The difference averaged .36 cents a pound lower for nitrogen in 10-20-10, .47 cents less for that in 4-8-6, .57 cents less for that in 4-12-4, and .78 cents per pound less this year in 4-8-4.

Cost of Phosphoric Acid. The cheapest source of phosphoric acid was 11-48-0, then 16-20-0, followed by 45% superphosphate and then 10-20-10. The cost of available phosphoric acid was about .27 cents less per pound in 20 per cent superphosphate than in 18 per cent. Omitting the household fertilizers, phosphoric acid was most expensive in pulverized sheep manure, then in soft phosphate with colloidal clay with nitrogen, and then 4-10-0, and 3-10-0. Available phosphoric acid was .42 cents a pound lower in 4-8-4 than it was last season, and .60 cents a pound lower in 4-12-4 than last year.

Cost of potash. 10-20-10 furnished the cheapest potash, followed 6-12-6 and then 8-8-8. Omitting the garden fertilizers, potash was the most expensive in pulverized sheep manure, followed by 3-10-3, kainit 20% and then 4-8-4. Potash cost .17 cents a pound more in 4-8-4, and .23 cents a pound more in 4-12-4.

Relation of Cost to Concentration of Fertilizers

Certain fertilizers are sold which contain plant food in the same ratio so that, so far as nitrogen, phosphoric acid and potash are concerned, they are the same fertilizer except in concentration, or strength.

The ratio of plant food in the 4-12-4 and 5-15-5 fertilizers is exactly the same, as the proportions are three parts phosphoric acid to one of nitrogen and one of potash. The 3-10-3 fertilizer has partially the same ratio of 1-3-1. Table 6 shows the approximate cost of nearly equal quantities of plant food in these fertilizers at the average prices given in Table 4. One ton of 6-12-6 costs \$5.77 less than an equal quantity of plant food in 1½ tons of 4-8-4. The plant food in 1.25 tons of 4-12-4 costs \$1.06 more than an equal quantity in 5-15-5. The 1.67 tons of 3-10-3 cost \$7.49 more than the 1.0 tons of 5-15-5, but when an allowance of \$2.27 is made of the 33 pounds more phosphoric acid it contains, the plant food in 3-10-3 costs \$5.36 more. The sale of 3-10-3 has now been discontinued. Similar differ-

ences are to be seen with the other grades. The most concentrated mixed fertilizer was the cheapest per pound of plant food, or to put it another way, the highest priced fertilizer per ton may be the lowest priced per pound of plant food. This difference is caused partly by freight charges, partly by the cost of bagging, etc. The higher cost of manufacture of the more concentrated fertilizers is frequently more than offset by the cost of freight, bags, etc. As shown in Table 5, the cost of phosphoric acid averaged .27 cents a pound less in 20 per cent superphosphate than in 18 per cent.

Table 6. Relative cost of approximately the same amount of plant food in different grades of fertilizer.

Grade	Nitrogen pounds	Available Phosphoric acid pounds	Potash pounds	Total Cost
Group 1				
1.0 tons 6-12-6	120	240	120	\$35.98
1.5 tons 4-8-4	120	240	120	41.75
Group 2				
1.00 tons 5-15-5	100	300	100	37.75
1.25 tons 4-12-4	100	300	100	38.81
1.67 tons 3-10-3	100	333	100	45.24

Comparing Cost of Fertilizer

The relative money value of two or more kinds of fertilizer may be roughly compared by dividing the price at which the fertilizer is sold per ton by the valuation per ton of the fertilizer. While guaranteed valuations for many grades for the season of 1940-41 may be somewhat different from those published in this bulletin, the valuations here given may be used for comparative purposes. For example, if a 4-8-4 fertilizer sells for \$29.00 a ton and a 6-12-6 fertilizer for \$37.20, which is cheaper? Using the valuations from Table 4, for 4-8-4, the selling price, \$29.00, divided by the valuation, \$25.20, gives \$1.15; for 6-12-6, the selling price, \$37.00, divided by the valuation, \$37.20, gives \$0.98. Thus one dollar of valuation costs \$1.15 in 4-8-4, and \$0.98 in 6-12-6. Therefore, the 6-12-6 is cheaper. Similar calculations may be made for other grades and for other prices.

Of course the suitability of the fertilizer to the soil and crop must be considered in addition to the relative cost of the plant food.

Free Analyses

Purchasers of commercial fertilizers for their own use (but not for sale), can secure a free analysis of a sample provided they take a legal sample. Those who desire the free analysis of a sample of commercial fertilizer should write for a blank, "Application for Free Fertilizer Analysis," to the State Chemist, College Station, Texas, before taking a sample. The proper sampling of a fertilizer requires care, and the law re-

quires it to be taken in a certain way so that a fair sample is taken. If the sample is not properly taken, it does not represent the fertilizer sampled, and the analysis may be better or poorer than the goods actually are. This privilege of a free analysis applies only to fertilizers tagged, and sold under the fertilizer law and to samples properly taken so that they represent the goods sampled.

Analysis of Fertilizers, 1940-41

Samples of fertilizer were collected from the goods being sold in many towns and cities. The chief places of sales were visited several times. The number of samples registered for analysis was 1018.

Table 10 near the end of this Bulletin, contains a list of 1018 of the samples of fertilizer subjected to analysis in the season ending September 1, 1941. Practically all samples of fertilizer were collected by our inspectors. Analyses and inspection were made by S. E. Asbury, T. L. Ogier, Waldo Walker, G. S. Shepard, Geo. Smith, M. Joseph, and Leon Miller.

Relation of Valuation Guaranteed to Valuation Delivered

Table 7 contains the average guaranteed valuation, and the average valuation found by our analyses, for all manufacturers doing business in Texas. In the preparation of this table, all analyses made were averaged, even though several were made of each brand and fertilizer materials are included as well as mixed fertilizers.

Table 7. Average valuation of all fertilizers guaranteed and found in dollars per ton, 1940-41.

Manufacturer	Number Averaged	Valuation Guaranteed	Valuation Found	No. of samples more than 4% below guarantee
American Cyanamid Company	16	\$71.58	\$73.03	0
Armour Fertilizer Works	128	31.67	32.13	0
The Barrett Company	1	38.40	40.32	0
Bryan Cotton Oil & Fertilizer Company.....	12	28.55	29.51	1
Campbell Fertilizer Company	33	28.85	30.77	1
Chilean Nitrate Sales Corporation	5	38.40	39.44	0
Coastal Chemical Company, Inc.	11	42.72	41.56	5
Colorado Fuel and Iron Corporation	4	49.20	49.28	0
Consolidated Chemical Industries, Inc.....	3	28.68	28.83	0
Consumers Peanut Company	1	30.40	29.21	0
Crockett Fertilizer Works	19	30.14	30.96	0
Davison Chemical Corporation	6	32.80	32.04	2
Dixie Chemical Company	1	25.20	24.92	0
E. I. du Pont de Nemours & Co.....	4	100.80	103.10	0
East Texas Cotton Oil Co. (Palestine).....	25	30.19	30.44	3
East Texas Cotton Oil Company (Tyler) ..	15	30.73	31.05	0
Farmers Cotton Oil Company	7	31.29	30.42	2
Federal Chemical Company, Inc.....	37	29.12	29.43	1
Fidelity Chemical Corporation	81	32.49	32.76	3
Ford Motor Company.....	3	49.92	50.28	0
Houston Cotton Oil Company	1	22.60	22.15	0
Gilmer Cotton Oil & Fertilizer Company.....	11	29.68	30.79	0
International Agricultural Corporation	62	30.61	31.18	0
Interstate By-Products & Supply Company ..	1	37.00	37.51	0
Jacksonville Fertilizer Company	5	32.94	34.12	0

Table 7—Continued

Kelly-Weber & Company, Inc.....	8	24.84	24.79	1
Longview Cotton Oil Company	14	29.98	29.29	3
Marshall Cotton Oil Company	16	31.15	31.56	0
Mixson Brothers	16	31.56	31.59	0
Mueller-Huber Grain Company	1	29.20	32.38	0
Nicholson's Seed Store	3	34.80	35.32	1
Oil Mill & Fertilizer Company	15	30.07	29.64	1
Pate Bros. Fertilizer Works	14	30.50	30.13	2
Pittsburg Cotton Oil Company	11	31.05	30.72	1
Port Fertilizer Company	7	38.77	39.69	0
The Pulverized Manure Company	1	8.70	11.51	0
Sewerage Commission of the City of Milwaukee	2	17.00	17.41	0
L. W. Shaffer Company	1	8.50	11.94	0
Shreveport Fertilizer Works	43	29.98	30.44	3
Southwestern Peanut Growers Association	11	28.07	27.82	1
Swift & Company Fertilizer Works.....	165	31.31	31.01	17
Temple Cotton Oil Company	12	31.43	30.88	2
Texas Farm Products Company	42	29.14	29.27	0
Tri-State Fertilizer and Lumber Company	7	29.67	30.02	0
Tyler Fertilizer Company	12	29.69	29.64	0
United Chemical Company	49	30.10	29.92	5
Virginia-Carolina Chemical Corporation..	68	30.40	30.63	1
Waldo Fertilizer Works	2	26.50	26.39	0
Chas. F. Ward	3	31.45	38.69	0

Averages Below Guarantee

Whenever any lot of fertilizer is 4 per cent or more below guarantee, the law requires all persons who have sold this lot of fertilizer to make good the deficiency to all purchasers. This rebate is paid by the manufacturer to the dealer and by the dealer to the customer. The number of lots on which rebates were paid by each manufacturer is shown in Table 7.

Fillers

Many mixed fertilizers are made by mixing together ammonium sulphate, superphosphate, potash salts, and other materials containing nitrogen, phosphoric acid and potash. It is possible to make such fertilizers entirely from fertilizing materials, but it is often more desirable and less expensive to make a mixture to the desired composition by the addition of sand, dolomite, or other material containing little or no fertilizing ingredients. Such additions are called fillers.

The materials used as filler in the grades of fertilizer offered for sale in Texas the past several seasons included sand, limestone, lime, dolomite, spent fullers earth, citrus pulp, gypsum, phosphate rock, cocoa meal, and coffee chaff.

Only small quantities of limestone or lime can be used because larger quantities will revert some of the available phosphoric acid to insoluble phosphoric acid, thereby decreasing the percentage of available phosphoric acid in the fertilizer and causing it to fall below guarantee.

Non-Acid Forming Fertilizers

Ordinary fertilizers when used for a number of years on soils with a low buffer capacity may acidify a neutral soil, or make an acid soil more

acid, and so are termed acid-forming fertilizers. Non-acid forming fertilizers are made by the addition of sufficient amounts of ground dolomite to neutralize the acidity, or by the selection of suitable fertilizing ingredients. Dolomite is a calcium magnesium carbonate. Limestone is not suitable because large quantities revert the available phosphoric acid of the fertilizer and causes it to become insoluble. In the eastern part of the United States, where fertilizers have been used for a long time and where the soils are already acid, ordinary fertilizer may not give as good yields of crops as non-acid forming fertilizers. Non-acid forming fertilizers are recommended for use on acid soils having a pH of 5.5 or lower and which are likely to become still more acid with ordinary fertilizers. Since Texas soils are generally only slightly acid, or even alkaline, the use of non-acid forming fertilizers is not at present necessary, except under exceptional conditions. Where the soils are neutral or slightly alkaline, as is the case in large areas of limestone soils, ordinary fertilizers are preferable to non-acid forming fertilizers. Some plants require slightly acid soils for best results. An acid forming fertilizer may be better on an alkaline soil than a non-acid forming fertilizer. For further information see Progress Report No. 594.

Only two brands of fertilizer sold in Texas this season were claimed to be non-acid forming. Examination was made of 24 samples, with the results given in Table 8.

Acid Forming Qualities of Some Fertilizers

Table 8 shows the acid forming qualities of some of the ordinary fertilizers. The figures represent approximately the acidity (or basicity) equivalent to pounds of calcium carbonate per ton of fertilizer, A after the figures meaning acid, and B meaning basic. Thus, fertilizer No. 64729, has an acid-forming property equivalent to about 1,118 pounds of calcium carbonate per ton of fertilizer. The fertilizer is not itself acid, but will probably have this acid-forming power on the soil. Only four samples of the ordinary fertilizers were found to be basic.

Table 8. Analyses of non acid-forming and ordinary fertilizers.

Laboratory Number	Name of Brand	Acid-Base balance
Claim to be non acid-forming		
65786	Swift's pH 7 6-8-4.....	70.1A
65809	Swift's K.O. Non Acid-Forming 6-8-8.....	73.3A
65821	Swift's pH 7 6-8-4.....	82.9A
65823	Swift's pH 7 6-8-4.....	5.4A
65836	Swift's pH 7 6-8-4.....	69.7B
65837	Swift's K.O. Non Acid-Forming 6-8-8.....	87.9B
65844	Swift's pH 7 6-8-4.....	69.4B
65846	Swift's pH 7 6-8-4.....	42.3A
65862	Swift's K.O. Non Acid-Forming 6-8-8.....	8.4B
65863	Swift's pH 7 6-8-4.....	36.5B
65880	Swift's K.O. Non Acid-Forming 6-8-8.....	40.9A
65884	Swift's pH 7 6-8-4.....	44.5B
65887	Swift's K.O. Non Acid-Forming 6-8-8.....	23.1B

Table 8—Continued

65888	Swift's pH 7 6-8-4.....	80.6B	passed
65892	Swift's pH 7 6-8-4.....	22.3B	passed
65893	Swift's K.O. Non Acid-Forming 6-8-8.....	57.4A	Sl. acid-forming
65922	Swift's pH 7 6-8-4.....	39.3B	passed
65931	Swift's K.O. Non Acid-Forming 6-8-8.....	45.9A	passed
65932	Swift's pH 7 6-8-4.....	12.4B	passed
65941	Swift's K.O. Non Acid-Forming 6-8-8.....	29.1A	passed
65942	Swift's pH 7 6-8-4.....	78.3B	passed
65989	Swift's K.O., Non Acid-Forming 6-8-8.....	35.4A	passed
66007	Swift's pH 7 6-8-4.....	14.3B	passed
66014	Swift's K.O., Non Acid-Forming 6-8-8.....	15.2B	passed
No claim made as to acid or non acid-forming properties			
64729	'Ammo Phos' 11-48-0.....	-1118A	
64730	'Ammo Phos' 16-20-0.....	-1755A	
64875	Fidelity 4-12-4 Fertilizer.....	-355A	
65356	White Diamond Brand Fertilizer Old Reliable.....	-226A	
65370	White Diamond Brand Fertilizer Pioneer.....	-372A	
65008	Armour's Big Crop Fertilizer 4-8-4.....	-344A	
64973	Armour's Big Crop Fertilizer 4-8-10.....	-372A	
64872	Armour's Big Crop Fertilizer 5-15-5.....	-583A	
65027	Armour's Big Crop Fertilizer 6-10-7.....	-545A	
64794	Armour's Big Crop Fertilizer 10-20-10.....	-796A	
65017	Armour's Big Crop Fertilizer Old Black Joe.....	-366A	
64842	All-Weather Organic Base Fertilizer 5-15-5.....	+79B	
64883	All-Weather Organic Base Fertilizer 6-12-6.....	+91B	
65255	Crescent 4-12-4 Fertilizer.....	-254A	
65136	Meridian Double Duty.....	-244A	
65265	Fidelity 4-8-6 Fertilizer.....	-247A	
64757	Valley Port Brand 11-48-0 Fertilizer.....	-1154A	
64982	6-12-6 Double Circle Fertilizer.....	-81A	
65103	Longhorn NPK 23 Fertilizer.....	-312A	
65344	Marshall 4-12-4 Fertilizer.....	-87A	
64818	"United Plantfood" 6-12-6.....	-545A	
64884	Vigoro.....	-77A	
65347	King Cotton P12 Fertilizer 4-8-4.....	-37A	
65287	Jasco Brand Special No. 4-12-4.....	-113A	
64888	Blume Plant Special.....	-288A	
65206	Fidelity 4-8-4 Fertilizer.....	-262A	
65324	Fidelity 5-15-5 Fertilizer.....	-491A	
65408	Quapaw 10-20-10.....	-856A	
65415	Pioneer 4-8-4.....	-218A	
65513	Texas Longhorn Yam Surecrop.....	+48B	
65536	Nicholson's All-Round Fertilizer.....	-290A	
65544	Goldenrod 6-10-7.....	-397A	
65682	Swift's Red Steer Brand Rice Mixture 4-10-0.....	+112B	
65694	Fidelity 4-12-4 Fertilizer.....	-392A	
65715	Swift's Red Steer Brand 6-12-6 Fertilizer.....	-272A	
65726	ETCO 6-9-3 Fertilizer.....	-50A	

Relation to Experiment Station Work

The work of the State Chemist is closely related to the chemical work of the Experiment Station. In his capacity as Chief of the Division of Chemistry of the Experiment Station, the State Chemist is carrying out extensive investigations into the fundamental properties of soils, especially with respect to their content of plant food. This work is related closely to the use of fertilizers and is connected with investigations as to the agricultural values of fertilizers required of the Fertilizer Control, for fertilizers vary in effect upon the different soils.

Soft Phosphate With Colloidal Clay and Phosphate Rock

Soft phosphate with colloidal clay is a natural phosphate of lime containing 20 per cent of total phosphoric acid or more. The phosphate of lime is so finely divided that some of it is termed colloidal. The availability

to plants of the phosphoric acid of soft phosphate with colloidal clay is on an average about 40 per cent of that of the available phosphoric acid in 20 per cent superphosphate. Additional information is given in Bulletin 509.

Phosphate rock contains phosphoric acid as tri-calcium fluorophosphate and contains about 3 per cent of fluorine. When sufficiently pure, phosphate rock is used for the manufacture of superphosphate. The phosphoric acid in phosphate rock is taken up very slowly by the plants. There are very decided differences in the power of plants to take up phosphoric acid from phosphate rock and its effect is different on different soils. The availability of the total phosphoric acid in rock phosphate to plants averages about one-fifth of the availability of the phosphoric acid in superphosphate. Additional information is given in Bulletin 212.

Sulphur, Gypsum, Manganese, and Other Secondary Fertilizing Elements

Our present evidence indicates that manganese, magnesium, sulphur, calcium, boron, iodine, zinc or other secondary fertilizing elements are not needed as additions to Texas soils. Sulphur and calcium are present in large quantities in practically all mixed fertilizers except nitrate of soda, which is low in both, ammonium sulphate, which is low in calcium, and cyanamid, which is low in sulphur. Small quantities of the other elements are also present. The quantities of sulphur and calcium in some Texas fertilizers are given in Bulletin 593.

We are unable to recommend the use of sulphur or gypsum alone as a fertilizer to supply sulphur in Texas because Texas soils need nitrogen, phosphoric acid or potash much more than they need sulphur, and the sulphur or gypsum does not supply any of these plant foods. The experiments which have been carried out do not give results which justify the use of such materials alone as fertilizers (see Bulletins 408 and 414). This also applies to the natural mixture of sulphur, gypsum, sulphuric acid and other substances, which various parties and concerns have attempted to sell or exploit as a fertilizer or soil amendment. It is not recommended for use as a fertilizer and does not give results on soils which need fertilizer, as shown in Bulletins 408 and 414.

For plants which do best on an acid soil, sulphur is sometimes used to acidify soils that are alkaline or neutral. The organisms in the soil oxidize the sulphur to sulphuric acid and thus in turn acidifies the soil. The oxidation requires two or three months. The quantity to be used depends upon the buffer capacity of the soil for acid, and may range from a few hundred pounds to several thousand pounds per acre. In the latter case, acidification of spots is best. The value of a sulphur for acidifying the soil depends on the quantity of sulphur present: a material containing 85 per cent of sulphur is $4\frac{1}{4}$ times as strong as one containing only 20 per cent of sulphur and one containing 99 per cent sulphur is 14 per cent stronger than one which contains 85 per cent.

On some limestone soils plants suffer from a yellowing of the leaves, known as chlorosis, usually due to deficiency of iron. The presence of carbonate of lime prevents the plant from taking up (or utilizing) sufficient iron. Most of these soils contain such large quantities of carbonate of lime that broadcast applications of sulphur are soon neutralized and made useless. A sufficient number of acidified spots may prevent the chlorosis. The acidified spots may be made by digging post holes to depths of 2 to 3 feet, mixing the dirt with sulphur and returning the mixture to the holes. Holes may also be made with a pointed iron rod and filled with the sulphur. A sulphur compost may also be used, as recommended by Godfrey in Progress Report No. 675.

Investigations on the use of manganese sulphate for Texas soils are given in Bulletin 432. The results of the experimental work do not justify recommendation of the use of manganese sulphate on Texas soils. The manganese content of some Texas fertilizers is given in Table 9.

Table 9. Manganese in some fertilizers 1940-41

Laboratory Number		Manganese parts per million
65793	Nitrate of Soda	4.3
65838	Chilean Nitrate of Soda	6.2
65903	Chilean Nitrate of Soda	5.4
65915	Chilean Nitrate of Soda	2.9
65921	Chilean Nitrate of Soda	3.2
65817	Sulphate of Ammonia	4.2
65918	American Nitrate of Soda	2.7
65795	16-20-0	86.7
65797	11-48-0	155.4
65798	Sulphate of Ammonia 20.5%	23.4
65806	16-20-0	79.8
65807	16-20-0	156.0
66271	4-8-4	42.6
66354	4-12-4	36.4
66435	4-8-4	222.8
66446	6-10-7	49.2
66450	6-10-7	103.8
66066	6-10-7	114.9
66069	4-8-4	78.9
66071	6-12-6	51.0
66080	6-9-3	48.9
66082	4-8-6	61.5
66083	6-8-4	744.0
65666	4-12-4	78.0
65669	4-12-4	73.5
65672	4-12-4	80.3
65673	4-12-4	69.8
65674	4-8-4	96.0
65675	4-12-4	110.0
65676	20% Superphosphate	131.0
65679	4-12-4	60.8
65680	4-8-4	48.0
65685	4-8-4	102.0
65689	4-8-4	82.9
65692	18% Superphosphate	108.4
65693	4-8-4	34.5
65694	4-12-4	44.3
65698	4-8-4	147.0
65701	4-8-4	132.0
65657	4-8-4	67.8
65659	4-8-4	114.0
65661	4-8-4	50.7

Table 9—Continued

65666	4-12-4	78.0
65669	4-12-4	78.5
65672	4-12-4	80.3
65673	4-12-4	69.8
65674	4-8-4	96.0
65675	4-12-4	109.5
65676	20% Superphosphate	131.0
65679	4-12-4	60.8
65680	4-8-4	48.0

Greensand

A report of investigations regarding the value of greensand as a fertilizer was published in Bulletin 428. The availability of the potash and phosphoric acid in greensand was found to be low. Greensand has little fertilizing value but can be used in quantities of 5 to 40 tons to an acre on land near to the deposits where it can be mined and applied at a cost closely related to its value. It does not contain sufficient fertilizer value to justify attempting to market it.

Polyhalite, Sewage Sludge and Spent Phosphate Catalyst

Polyhalite, a mineral found in deep deposits in western Texas and in New Mexico, contains about 12 per cent potash, which is only partly soluble in water, but which is readily available to plants. Additional information is given in Bulletin 449.

Digested sewage sludge is low in plant food, and the nitrogen has a low availability. Dried activated sludge contains about 5 per cent nitrogen and 2 per cent available phosphoric acid and the nitrogen has a good availability to plants. Additional information is given in Bulletin 445.

A catalyst containing phosphoric acid is used in the manufacture of gasoline from petroleum. When fresh, it contains from 40 to 54% available phosphoric acid (P_2O_5) and about 58% insoluble material (silica). The weathered catalyst may contain only 24% phosphoric acid. It is acidic, having an acid-base balance equal to 561 to 836 pounds of calcium carbonate per ton. Ignition with magnesium nitrate gives correct results for total phosphoric acid, but solution in acids gives results which may be 10% too low. The percentage of the phosphoric acid taken up by corn and kafir in eight tests on four soils was nearly as high as from superphosphate. The phosphoric acid of spent phosphate catalyst has a high order of availability to plants, being much like that of superphosphate.

Vitamin B₁

Vitamin B₁ (thiamin hydrochloride) is now an ingredient of some garden fertilizers and is sold alone in such a way as to bring it under the Texas fertilizer law. Extravagant claims had to be revised.

Vitamin B₁ appears to promote the growth of roots and may be of advantage at the time plants are transplanted. Vitamin B₁ does not and

cannot take the place of mineral fertilizers essential to plant growth. If the soil does not contain sufficient plant food, fertilizers are needed whether vitamin B₁ is supplied or not.

All plants produce vitamin B₁ in their leaves and in their roots. Many plants, especially wheat, corn, tomatoes, peas, beans, etc., produce sufficient vitamin B₁ to supply all needs.

The application of vitamin B₁ in the growing of plants probably has a definite field of usefulness, but its use is still in the experimental stage. Those who wish to experiment with it should apply it to five or more plants, and not apply it to five or more similar plants growing under the same conditions. Unless some such comparison is made, it is not possible to tell whether or not the vitamin B₁ is effective. Recent experiments have shown that application of vitamin B₁ have little effect on the growth or flowering of most plants.

Fertilizers for Water Culture

Soluble fertilizers, intended for use in water culture, are now being sold. Water culture is the growing of plants in a water solution that contains all the necessary elements for proper plant growth. There is nothing either new or miraculous about growing plants in water, as it has been done for a hundred years. What is new is the commercial application of water-culture methods.

The soil supplies plants with necessary elements, can be easily fertilized, and the soil helps to regulate the supply of plant food to the plant. The elements which must be added to the water in which the plants are to be grown include nitrogen, potassium, calcium, magnesium, sulphur, iron, manganese, boron, zinc and copper. The solution must have the proper acidity, which requires adjustment or renewal from time to time. The plants must be properly supported. Once the plants begin to grow, the questions of suitable quantities of light, correct temperature, heat, as well as protecting from pests and diseases must be met. Keeping the solution well balanced in necessary elements is important and not always easy. All plants do not use the same quantities of the elements, consequently as one is absorbed freely by certain plants there may be an excess of another.

Growing plants in water culture is in the experimental stage. For some crops the method is entirely too expensive, for other crops, the yield will be just as large when grown in soil. For anyone who wishes to experiment with water culture, there are several books describing the technique in detail, which can be purchased from a good bookstore.

Information Concerning the Use of Fertilizer

Information concerning the use of commercial fertilizer for various crops in different sections of Texas is given in Circular 85, and this will

be sent free on request. Some publications of the Texas Experiment Station giving information on fertilizers and fertilizing material are as follows:

- Circular 85—Use of commercial fertilizers.
- Bulletin 167—Commercial fertilizers and their use.
- Bulletin 212—The availability of phosphoric acid in rock phosphate.
- Bulletin 350—Fertilizer statistics for Texas (to 1927).
- Bulletin 398—Fertilizers for rice in Texas.
- Bulletin 414—Possibilities of sulphur as a soil amendment.
- Bulletin 428—The fertilizing value of greensand.
- Bulletin 432—Manganese in Texas soils and its relation to crops.
- Bulletin 445—The composition and fertilizing value of sewage sludge.
- Bulletin 469—Fertilizer experiments with cotton.
- Bulletin 509—Availability of the phosphoric acid of finely divided rock phosphate.
- Bulletin 524—Fertilizer experiments with yellow Bermuda onions in the Winter Garden region of Texas.
- Bulletin 572—Fertilizer statistics for Texas, 1926-1938.
- Progress report 594—Non-acid forming fertilizers.
- Bulletin 596—Onion fertilizer experiments at Laredo, Big Well, and Eagle Pass, Texas.
- Bulletin 602—Fertilizers for rice in Texas.
- Progress report 675—Acid production in compost of sulphur and organic matter.
- Circular 90—Rose growing for the home gardener.

Any of these publications will be sent free on request to the Director of the Experiment Station, College Station, Texas. In order to avoid errors, both the name and the number should be given.

Summary

This Bulletin contains a report of the Texas Fertilizer Control for 1940-41.

An explanation of terms is given.

Sales of fertilizer in Texas were 129,578 tons in 1940-41. They were 116,307 tons in 1939-40. The tonnage for other years is given. The tons reported do not include cottonseed meal sold as a feed but used as a fertilizer.

The average selling prices and composition of the different kinds of fertilizer are given.

Available phosphoric acid costs slightly less in 20 per cent superphosphate than in 18 per cent.

Plant food costs less per pound in the more concentrated fertilizers than in less concentrated fertilizer, though the former costs more per ton.

The grades of fertilizer to be sold next season are given.

A table is given showing the relation of the guaranteed valuation to the valuation delivered by the various manufacturers.

Analysis of 1018 samples collected by the inspector are given.

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
American Cyanamid Company, New York, New York					
	21% 'Aero' Cyanamid Granular Guarantee.....	21.00			\$50.40
65819	Analysis	20.97			50.53
65858	Analysis	20.84			50.02
65907	Analysis	21.34			51.22
65927	Analysis	21.38			51.31
	'Ammo-Phos' 11-48-0 Guarantee	11.00	48.00		88.80
65797	Analysis	11.19	49.00		90.56
65807	Analysis	11.12	48.51		89.75
65820	Analysis	11.27	48.70		90.36
65828	Analysis	11.18	48.21		89.50
65841	Analysis	11.02	48.20		89.11
65905	Analysis	11.31	48.32		89.96
65924	Analysis	11.09	48.75		90.00
	'Ammo-Phos' 16-20-0 Guarantee	16.00	20.00		64.40
65795	Analysis	16.28	21.53		67.06
65806	Analysis	16.15	22.43		67.92
65816	Analysis	16.05	21.48		66.44
65842	Analysis	16.02	22.03		67.09
65910	Analysis	16.37	22.00		67.89
Armour Fertilizer Works, Houston, Fort Worth, Texas and New Orleans, Louisiana					
	Armour's Big Crop Fertilizer 3-10-0 Guarantee.....	3.00	10.00		20.20
66270	Analysis	2.46	13.45		23.39
	Armour's Big Crop Fertilizer 3-10-3 Guarantee.....	3.00	10.00	3.00	24.10
65872	Analysis	3.00	10.86	3.02	25.25
66229	Analysis	3.01	11.77	3.08	26.52
	Armour's Big Crop Fertilizer 4-8-4 Guarantee.....	4.00	8.00	4.00	25.00
65947	Analysis	3.98	8.52	4.06	25.91
66015	Analysis	3.95	8.44	4.04	25.70
66141	Analysis	3.82	8.07	4.06	24.34
66355	Analysis	4.13	8.50	4.16	26.57
66437	Analysis	4.04	8.25	4.00	25.63
66487	Analysis	4.39	9.26	4.44	28.35
66526	Analysis	3.81	8.27	4.28	25.45
66742	Analysis	4.27	8.45	4.35	26.90
	Armour's Big Crop Fertilizer 4-8-6 Guarantee.....	4.00	8.00	6.00	27.80
65943	Analysis	4.14	7.98	5.57	27.55
66072	Analysis	4.08	7.73	5.72	27.28
66143	Analysis	4.04	8.09	5.64	27.55
66170	Analysis	4.13	8.40	5.79	28.36
66189	Analysis	4.15	8.39	5.76	28.36
66209	Analysis	4.08	8.34	6.07	28.52
66475	Analysis	4.12	8.69	6.24	29.30
66499	Analysis	4.01	8.51	5.73	28.13
66568	Analysis	4.92	8.26	5.55	29.77
66575	Analysis	4.04	8.16	5.44	27.38
66616	Analysis	4.02	8.43	5.46	27.71
66624	Analysis	4.21	8.34	5.38	27.93
66683	Analysis	3.98	8.57	5.55	27.91
66744	Analysis	4.11	8.53	6.14	28.93
66751	Analysis	4.17	8.69	5.71	28.73
	Armour's Big Crop Fertilizer 4-10-0 Guarantee.....	4.00	10.00		22.60
66739	Analysis	4.26	9.23		22.22
	Armour's Big Crop Fertilizer 4-12-4 Guarantee	4.00	12.00	4.00	30.40
65885	Analysis	4.14	11.99	4.02	30.76
65946	Analysis	4.07	12.26	4.02	30.74
66256	Analysis	4.02	12.55	3.80	30.65
66299	Analysis	3.94	12.34	4.04	30.75
66300	Analysis	4.02	12.54	4.05	31.22
66301	Analysis	4.00	12.68	4.18	31.51
66525	Analysis	4.02	12.16	4.10	30.79
66666	Analysis	3.93	12.31	3.80	30.37

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Armour Fertilizer Works, Housotn, Fort Worth, Texas and New Orleans, Louisiana—Continued					
Armour's Big Crop Fertilizer 4-12-4 Guarantee					
Continued—					
66682	Analysis	4.01	12.39	4.02	30.96
66694	Analysis	3.94	12.14	3.70	30.05
66701	Analysis	4.09	12.05	3.84	30.48
66736	Analysis	3.89	12.47	3.83	30.53
Armour's Big Crop Fertilizer 5-15-0 Guarantee					
65789	Analysis	5.00	15.00		31.50
65801	Analysis	4.99	15.33		31.91
65802	Analysis	5.32	14.62		31.78
65830	Analysis	5.26	14.73		31.77
Armour's Big Crop Fertilizer 5-15-5 Guarantee					
65787	Analysis	5.12	15.30		32.18
65804	Analysis	5.00	15.00	5.00	38.00
65831	Analysis	5.19	15.49	4.91	38.98
65861	Analysis	5.26	15.35	5.22	39.55
65916	Analysis	5.19	15.45	4.39	38.26
66319	Analysis	5.10	15.19	5.16	38.70
66349	Analysis	5.14	15.16	5.06	38.63
Armour's Big Crop Fertilizer 6-8-4 Guarantee					
66498	Analysis	5.26	15.10	5.02	38.78
66741	Analysis	5.21	15.08	5.30	38.99
Armour's Big Crop Fertilizer 6-9-3 Guarantee					
66073	Analysis	6.00	9.00	3.00	30.00
Armour's Big Crop Fertilizer 6-10-7 Guarantee					
65784	Analysis	5.88	9.20	2.90	29.84
65867	Analysis	6.00	10.00	7.00	36.50
65944	Analysis	6.21	10.43	7.30	37.95
66142	Analysis	5.95	10.21	6.56	36.08
66169	Analysis	6.12	10.26	7.08	37.23
66281	Analysis	6.13	10.26	7.18	37.38
66342	Analysis	5.96	10.04	7.42	37.00
66439	Analysis	6.03	10.73	6.65	37.07
66461	Analysis	5.92	10.62	7.01	37.13
66576	Analysis	5.97	10.30	7.02	36.85
66737	Analysis	5.82	10.38	6.32	35.68
Armour's Big Crop Fertilizer 6-12-6 Guarantee					
65794	Analysis	6.02	10.24	7.03	36.90
65800	Analysis	6.09	10.49	6.93	37.27
65805	Analysis	6.00	12.00	6.00	37.00
65859	Analysis	6.17	12.07	6.05	38.97
65945	Analysis	6.12	12.20	6.21	38.62
66071	Analysis	6.08	12.45	5.68	38.16
66103	Analysis	6.02	12.25	5.51	37.54
66111	Analysis	6.02	12.17	5.60	37.55
66144	Analysis	6.08	12.32	5.64	37.94
66229	Analysis	6.09	11.77	5.81	37.47
66356	Analysis	6.06	12.03	6.21	38.25
66424	Analysis	6.04	11.97	6.14	38.04
66524	Analysis	6.16	12.22	6.02	38.50
66656	Analysis	6.10	12.25	5.80	38.11
66740	Analysis	6.07	11.72	6.33	38.04
Armour's Big Crop Fertilizer 8-8-8 Guarantee					
66188	Analysis	6.04	11.81	6.03	37.69
66552	Analysis	6.16	12.03	5.75	37.90
Armour's Big Crop Fertilizer Old Black Joe Guarantee					
65860	Analysis	6.14	12.18	6.05	38.44
65886	Analysis	8.00	8.00	8.00	40.00
65911	Analysis	7.73	8.99	7.47	39.95
65948	Analysis	7.75	8.61	7.62	39.70
66016	Analysis	4.00	8.00	4.00	25.20
	Analysis	4.03	8.10	3.87	25.23
	Analysis	4.21	8.00	3.83	25.48
	Analysis	4.23	7.72	4.11	25.53
	Analysis	4.21	8.19	3.72	25.59
	Analysis	4.05	8.06	4.06	25.48

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Armour Fertilizer Works, Houston, Fort Worth, Texas and New Orleans, Louisiana—Continued					
Armour's Big Crop Fertilizer Old Black Joe Guarantee					
Continued—					
66053	Analysis	4.06	8.02	4.03	25.41
66070	Analysis	4.02	7.86	3.91	24.95
66102	Analysis	4.06	8.03	3.55	24.80
66132	Analysis	4.20	8.45	4.07	26.36
66210	Analysis	4.04	8.33	4.00	25.13
66218	Analysis	4.14	8.13	4.10	25.84
66257	Analysis	4.06	8.63	4.05	26.23
66271	Analysis	4.06	8.28	3.92	25.60
66302	Analysis	4.02	8.33	3.68	25.26
66423	Analysis	4.12	7.59	4.02	24.99
66438	Analysis	4.02	7.95	3.86	25.01
66460	Analysis	4.10	8.14	4.03	25.66
66474	Analysis	4.14	8.28	4.03	25.94
66527	Analysis	4.01	8.35	4.06	25.76
66539	Analysis	4.04	8.32	4.29	26.10
66551	Analysis	4.21	8.63	4.03	26.66
66567	Analysis	4.12	8.24	3.64	25.33
66625	Analysis	4.25	9.34	3.89	27.40
66665	Analysis	4.02	8.12	3.88	25.25
66667	Analysis	4.02	8.69	3.68	25.73
66684	Analysis	4.04	8.47	3.82	25.68
66743	Analysis	4.02	8.79	4.03	26.32
66783	Analysis	4.05	9.27	3.63	26.49
Armour's Big Crop Sulphate of Ammonia 20.5% Guarantee					
65829	Analysis	20.50			49.20
65840	Analysis	20.64			49.54
65847	Analysis	20.53			49.39
65909	Analysis	20.73			49.75
65933	Analysis	20.89			50.14
	Analysis	20.82			49.97
Armour's Big Crop Superphosphate 18% Guarantee					
65783	Analysis		18.00		23.40
66756	Analysis		17.44		22.67
	Analysis		19.28		25.06
Armour's Big Crop Superphosphate 20% Guarantee					
65785	Analysis		20.00		26.00
65792	Analysis		19.31		25.10
66249	Analysis		19.53		25.45
66655	Analysis		19.22		24.99
	Analysis		20.54		26.70
Armour's Dirt Farmer Fertilizer 4-10-0 Guarantee					
66755	Analysis	4.00	10.00		22.60
	Analysis	4.01	10.44		23.19
Armour's Garden Fertilizer 4-12-4 Guarantee					
66653	Analysis	4.00	12.00	4.00	30.40
	Analysis	4.02	11.90	4.12	30.45
Armour's Big Crop Multiphos 45% Superphosphate Guarantee					
65790	Analysis		45.00		58.50
65791	Analysis		44.63		58.02
	Analysis		45.09		58.62
Armour's Raw Bone Meal Guarantee					
65971	Analysis	3.70	22.00*		28.68
	Analysis	3.95	21.20*		28.56
Armour's Sulphate of Ammonia					
65913	Analysis	20.50			49.20
65914	Analysis	20.54			49.30
65917	Analysis	20.92			50.21
	Analysis	20.72			49.73
The Barrett Company (The Salvage Process Company), New York, New York					
Arcadian the American Nitrate of Soda Guarantee					
65918	Analysis	16.00			38.40
	Analysis	16.80			40.32
Bryan Cotton Oil & Fertilizer Company, Bryan, Texas					

*Total phosphoric acid.

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Bryan Cotton Oil & Fertilizer Company, Bryan, Texas—Cont'd.					
	Star Brand Cotton and Corn Fertilizer Guarantee.....	3.00	10.00	3.00	24.10
66091	Analysis	3.27	9.87	3.34	25.02
66555	Analysis	2.75	9.43	3.03	22.80
	Star Brand Special Fertilizer Guarantee.....	4.00	12.00	4.00	30.40
66090	Analysis	4.63	11.39	4.64	31.95
66275	Analysis	4.10	11.00	4.14	29.52
66556	Analysis	4.69	10.36	4.20	30.19
	Star Brand 20% Superphosphate Guarantee.....		20.00		26.00
66093	Analysis		20.44		26.57
66558	Analysis		20.59		26.77
	Star Brand Truck Fertilizer Guarantee.....	4.00	8.00	4.00	25.20
66092	Analysis	4.23	8.56	4.49	27.12
66276	Analysis	4.60	8.21	4.77	27.91
66554	Analysis	4.67	8.67	5.40	29.50
	Star Brand Tomato Fertilizer Guarantee.....	6.00	12.00	6.00	37.50
66089	Analysis	6.44	10.10	7.68	38.57
66557	Analysis	6.35	9.83	7.81	38.17
Campbell Fertilizer Company, Houston, Texas					
	3-10-0 All Weather Rice Special Fertilizer Guarantee....	3.00	10.00		20.00
66323	Analysis	2.45	11.27		20.53
66729	Analysis	2.44	10.88		20.00
	4-10-0 All-Weather Rice Fertilizer with Bone Meal				
	Guarantee	4.00	10.00		22.60
66324	Analysis	3.67	11.06		23.19
66749	Analysis	3.80	10.11		22.25
	All-Weather Organic Base Fertilizer 3-10-3 Guarantee....	3.00	10.00	3.00	24.10
65937	Analysis	2.85	11.37	3.57	26.26
66101	Analysis	3.45	10.60	4.13	27.43
66287	Analysis	2.85	11.35	3.46	26.10
66314	Analysis	2.84	10.88	4.45	26.75
66328	Analysis	2.68	12.18	3.03	26.20
66730	Analysis	2.34	10.70	3.04	23.48
	All-Weather-Organic Base Fertilizer 4-8-4 Guarantee	4.00	8.00	4.00	25.20
65929	Analysis	3.57	10.79	5.10	29.23
66098	Analysis	3.56	9.25	4.10	25.90
66733	Analysis	3.29	7.74	4.41	23.59
	All-Weather-Organic Base Fertilizer 4-8-6 Guarantee....	4.00	8.00	6.00	27.80
65935	Analysis	3.82	9.50	6.04	29.37
65980	Analysis	3.63	10.56	5.67	29.81
66313	Analysis	3.92	9.65	6.50	30.41
66327	Analysis	3.60	11.00	5.14	29.62
66731	Analysis	3.32	9.11	5.35	26.77
	All-Weather-Organic Base Fertilizer 4-8-10 Guarantee	4.00	8.00	10.00	33.00
65957	Analysis	4.00	10.53	9.55	35.70
	All-Weather-Organic Base Fertilizer 4-12-4 Guarantee	4.00	12.00	4.00	30.40
65939	Analysis	4.04	13.63	4.89	33.78
66288	Analysis	3.86	13.38	4.51	32.51
66315	Analysis	3.80	13.38	5.07	33.10
66325	Analysis	4.08	14.34	5.04	34.98
66732	Analysis	3.85	12.38	4.32	30.95
	All-Weather-Organic Base Fertilizer 5-15-5 Guarantee....	5.00	15.00	5.00	38.00
65878	Analysis	5.14	17.20	5.57	41.34
	All-Weather-Organic Base Fertilizer 6-8-4 Guarantee....	6.00	8.00	4.00	30.00
65877	Analysis	6.14	9.24	3.34	31.09
66099	Analysis	6.43	8.79	4.35	32.52
	All-Weather-Organic Base Fertilizer 6-10-7 Guarantee....	6.00	10.00	7.00	36.50
65868	Analysis	6.47	12.21	7.31	40.99
65938	Analysis	6.26	12.19	7.15	40.17
	All-Weather-Organic Base Fertilizer 6-12-6 Guarantee....	6.00	12.00	6.00	37.80
65869	Analysis	6.10	12.45	6.17	38.85

Table 10. Analysis of commercial fertilizer, season 1940-41

Number Laboratory	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Campbell Fertilizer Company, Houston, Texas—Cont'd.					
All-Weather-Organic Base Fertilizer 6-12-6 Guarantee					
Continued—					
65936	Analysis	6.44	13.27	6.55	41.23
66100	Analysis	6.82	10.37	7.79	39.98
66326	Analysis	6.02	13.39	6.69	40.56
Chilean Nitrate Sales Corporation, New York, New York					
	Chilean Nitrate of Soda—Champion Brand Guarantee.....	16.00			38.40
65793	Analysis	16.29			39.10
65838	Analysis	16.36			39.26
65903	Analysis	16.38			39.31
65915	Analysis	16.31			39.14
65921	Analysis	16.82			40.37
Coastal Chemical Company, Inc., Harlingen, Texas					
	Triple C Brand 4-12-4 Guarantee.....	4.00	12.00	4.00	30.40
65850	Analysis	3.64	10.92	4.19	28.39
	Triple C Brand 5-15-0 Guarantee.....	5.00	15.00		31.50
65852	Analysis	5.51	15.65		33.57
	Triple C Brand 5-15-5 Guarantee.....	5.00	15.00	5.00	38.00
65849	Analysis	4.95	14.19	3.10	34.36
	Triple C Brand 16-20-0 Guarantee.....	16.00	20.00		64.40
65839	Analysis	15.22	16.98		58.60
65848	Analysis	15.74	16.77		59.58
	Triple C Brand Sulphate of Ammonia Guarantee.....	20.50			49.20
65827	Analysis	20.91			50.18
65853	Analysis	20.79			49.90
65925	Analysis	20.68			49.63
	Triple C Brand 20% Superphosphate Guarantee.....		20.00		26.00
65900	Analysis		19.10		24.83
65923	Analysis		20.37		26.48
	Triple C Brand 32% Superphosphate		32.00		41.60
65851	Analysis		32.00		41.00
Colorado Fuel and Iron Corporation, Pueblo, Colorado					
	Silver Tip Sulphate of Ammonia Guarantee.....	20.50			49.20
65817	Analysis	20.61			49.46
65898	Analysis	20.44			49.06
65908	Analysis	20.56			49.34
65912	Analysis	20.52			49.25
Consolidated Chemical Industries, Inc., Houston, Texas					
	"T. C. C." Brand Raw Bone Meal Guarantee.....	3.70	22.00*		28.68
65970	Analysis	4.06	20.14*		27.87
66348	Analysis	4.07	22.25*		29.80
66750	Analysis	3.88	21.67*		28.81
Consumers Peanut Company, Stephenville, Texas					
	Cotton Bloom Brand 4-12-4 Guarantee.....	4.00	12.00	4.00	30.40
66745	Analysis	3.68	11.84	3.84	29.21
Crockett Fertilizer Works, Crockett, Texas					
	Crescent 3-10-3 Fertilizer Guarantee.....	3.00	10.00	3.00	24.10
66021	Analysis	4.02	10.32	3.44	27.54
66453	Analysis	3.98	10.35	3.41	27.44
	Crescent 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	25.20
66023	Analysis	4.02	8.00	4.21	25.52
66291	Analysis	4.32	9.03	3.88	27.15
66454	Analysis	3.87	7.70	4.19	24.75
66699	Analysis	4.11	8.09	3.90	25.45
	Crescent 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	27.80
66022	Analysis	4.02	8.59	6.16	28.83
	Crescent 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	30.40
66019	Analysis	4.38	12.59	4.59	32.85
66292	Analysis	4.08	12.68	4.10	31.60
66455	Analysis	3.89	12.11	4.13	30.45

*Total phosphoric acid

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Crockett Fertilizer Works, Crockett, Texas—Cont'd.					
Crescent 4-12-4 Fertilizer Guarantee					
Continued—					
66480	Analysis	4.46	12.79	4.14	32.71
66690	Analysis	3.88	11.77	4.28	30.17
	Crescent 6-8-4 Fertilizer Guarantee	6.00	8.00	4.00	30.00
66018	Analysis	5.56	8.23	4.42	29.79
66452	Analysis	5.42	7.93	4.59	29.29
	Crescent 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	36.50
66020	Analysis	6.01	10.45	6.20	36.07
66446	Analysis	5.89	9.75	7.50	36.57
66479	Analysis	5.89	10.66	7.25	37.43
66691	Analysis	6.02	10.18	7.74	37.74
	Crescent 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	37.80
66700	Analysis	5.75	12.09	5.69	36.92
The Davison Chemical Corporation, New Orleans, Louisiana					
	Davison Bull Dog Special 4-8-4 Guarantee	4.00	8.00	4.00	25.20
66340	Analysis	4.03	8.03	4.05	25.38
	Davison Bull Dog Special 4-12-4 Guarantee	4.00	12.00	4.00	30.40
65965	Analysis	3.91	12.07	4.29	30.65
66350	Analysis	3.96	11.55	3.95	29.66
	Davison Bull Dog Special 6-10-7 Guarantee	6.00	10.00	7.00	36.50
65966	Analysis	5.52	9.32	7.04	34.52
66352	Analysis	5.41	9.72	6.61	34.21
	Davison Bull Dog Special 6-12-6 Guarantee	6.00	12.00	6.00	37.80
66351	Analysis	5.97	12.05	6.03	37.84
Dixie Chemical Company, Sulphur Springs, Texas					
	Dixie 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	25.20
66534	Analysis	4.19	7.58	3.85	24.42
E. I. du Pont de Nemours & Company, Wilmington, Delaware					
	du Pont "Uramon" Fertilizer Compound Guarantee	42.00			100.80
65926	Analysis	43.18			103.63
	"Uramon" Guarantee	42.00			100.80
65818	Analysis	43.09			103.42
65834	Analysis	42.97			103.13
65899	Analysis	42.59			102.22
East Texas Cotton Oil Company, Palestine, Texas					
	Palestine Blue Star Brand 3-10-3 Fertilizer, Guarantee	3.00	10.00	3.00	24.10
66031	Analysis	3.04	10.33	3.55	25.35
	Palestine Blue Star Brand 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	25.20
66030	Analysis	3.98	7.77	4.05	24.92
66456	Analysis	3.97	8.77	4.08	26.23
66692	Analysis	3.88	7.20	4.27	24.22
66697	Analysis	4.04	9.11	3.73	26.39
66723	Analysis	3.96	10.27	2.21	25.72
	Palestine Blue Star Brand 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.80
66028	Analysis	4.19	7.91	6.33	28.57
	Palestine Blue Star 4-10-0 Guarantee	4.00	10.00		22.60
66026	Analysis	4.56	10.47		24.55
	Palestine Blue Star Brand 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	30.40
66027	Analysis	4.11	8.48	4.35	26.54
66252	Analysis	4.17	9.52	4.10	27.72
66261	Analysis	4.02	12.14	4.01	30.64
66289	Analysis	6.44	10.64	4.24	34.80
66458	Analysis	3.93	12.36	4.03	30.74
66685	Analysis	3.83	12.88	3.99	31.12
66693	Analysis	4.02	12.75	3.99	31.42
	Palestine Blue Star Brand 6-9-3 Fertilizer Guarantee	6.00	9.00	3.00	30.00
66688	Analysis	5.75	9.60	2.25	29.21
	Palestine Blue Star Brand 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	36.50
66032	Analysis	5.88	9.49	6.32	34.67
66457	Analysis	6.06	10.41	6.81	36.92
66689	Analysis	5.91	10.68	6.83	36.94

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nutrient content, per cent			
		Nitrogen	Available phosphoric acid,	Potash,	Valuation found,
		per cent	per cent	per cent	per ton
East Texas Cotton Oil Company, Palestine, Texas—Cont'd.					
Palestine Blue Star Brand 6-10-7 Fertilizer Guarantee					
Continued—					
66722	Analysis	5.88	11.06	6.65	37.14
	Palestine Blue Star Brand 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	37.80
66029	Analysis	6.16	11.39	5.87	37.22
66447	Analysis	5.81	12.38	6.68	38.71
66698	Analysis	5.88	12.72	4.74	36.81
	Palestine Blue Star Brand 20% Superphosphate				
	Guarantee		20.00		26.00
66253	Analysis		20.73		26.95
66687	Analysis		21.15		27.50
East Texas Cotton Oil Company, Tyler, Texas					
	Etco 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	25.20
66645	Analysis	3.78	8.77	4.01	25.68
	Etco 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.80
66507	Analysis	3.90	8.09	6.47	28.29
	Etco 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	30.40
66505	Analysis	4.20	12.67	4.07	31.84
	Etco 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	36.50
66508	Analysis	6.06	10.78	6.38	36.84
	Etco 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	37.80
66510	Analysis	6.19	12.60	6.04	39.09
	Goldenrod Brand 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	25.20
66086	Analysis	3.90	8.10	4.18	25.32
66491	Analysis	3.84	8.09	4.10	25.07
	Goldenrod Brand 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.80
66085	Analysis	3.81	8.19	6.08	27.69
	Goldenrod 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	30.40
66105	Analysis	4.08	12.43	4.63	31.97
66669	Analysis	4.34	12.41	3.71	31.37
	Goldenrod 6-8-4 Fertilizer Guarantee	6.00	8.00	4.00	30.00
66104	Analysis	5.92	8.66	3.61	30.16
66509	Analysis	5.66	8.15	3.89	29.24
	Goldenrod Brand 6-9-3 Fertilizer Guarantee	6.00	9.00	3.00	30.00
66506	Analysis	5.72	8.46	3.21	28.90
	Goldenrod Brand 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	36.50
66088	Analysis	5.74	9.88	7.51	36.38
	Goldenrod Brand 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	37.80
66087	Analysis	6.03	12.78	5.26	37.92
Farmers Cotton Oil Company, Winnsboro, Texas					
	Farmer's Fertilizer 4-8-4 Guarantee	4.00	8.00	4.00	25.20
66631	Analysis	3.85	8.43	4.86	26.52
	Farmers' Fertilizer 4-8-6 Guarantee	4.00	8.00	6.00	27.80
66632	Analysis	3.82	6.94	7.06	27.37
	Farmer's Fertilizer 4-8-10 Guarantee	4.00	8.00	10.00	33.00
66221	Analysis	4.13	6.39	11.59	33.29
	Farmer's Fertilizer 6-8-4 Guarantee	6.00	8.00	4.00	30.00
66222	Analysis	5.10	6.41	4.30	26.16
66633	Analysis	5.96	7.23	4.55	29.62
	Farmer's Fertilizer 6-10-7 Guarantee	6.00	10.00	7.00	36.50
66220	Analysis	5.76	8.58	7.40	34.59
66634	Analysis	5.50	9.61	7.45	35.38
Federal Chemical Company, Inc., Shreveport, Louisiana					
	Federal 4-8-4 Guarantee	4.00	8.00	4.00	25.20
66039	Analysis	4.24	8.19	4.33	26.46
66074	Analysis	4.17	8.25	4.08	26.04
66130	Analysis	4.17	8.55	4.33	26.76
66154	Analysis	4.16	8.18	4.14	25.99
66393	Analysis	4.20	8.51	3.93	26.24
66443	Analysis	4.25	8.02	3.91	25.71
66523	Analysis	4.08	7.57	4.03	24.87

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Available phosphoric acid, per cent	Valuation found, per ton
Federal Chemical Company, Inc., Shreveport, Louisiana—Cont'd.					
Federal 4-8-4 Guarantee					
Continued—					
66528	Analysis	4.12	8.60	4.19	26.52
66581	Analysis	4.11	8.13	4.05	25.70
66626	Analysis	3.74	9.12	3.74	25.70
66702	Analysis	4.09	8.03	3.62	24.97
66778	Analysis	4.01	8.18	4.03	25.49
66781	Analysis	3.94	8.78	3.80	25.81
66790	Analysis	3.61	10.04	3.84	26.70
	Federal 4-8-6 Guarantee	4.00	8.00	6.00	27.80
66040	Analysis	4.11	8.28	6.24	28.73
66065	Analysis	4.24	8.38	5.60	28.35
66174	Analysis	4.20	8.25	6.17	28.83
66187	Analysis	4.06	8.56	6.28	29.03
66211	Analysis	4.30	7.92	5.75	28.10
66213	Analysis	4.06	8.14	6.13	28.29
66516	Analysis	4.03	8.49	5.77	28.21
66619	Analysis	3.92	8.14	5.56	27.22
66627	Analysis	3.84	8.24	5.33	26.86
	Federal 4-12-4 Guarantee	4.00	12.00	4.00	30.40
66268	Analysis	4.05	11.41	3.71	29.37
66416	Analysis	4.16	11.24	4.19	30.04
66618	Analysis	4.18	11.54	3.98	30.20
	Federal 6-8-8 Guarantee	6.00	8.00	8.00	35.20
66186	Analysis	5.22	7.27	8.52	33.06
	Federal 6-9-3 Guarantee	6.00	9.00	3.00	30.00
66131	Analysis	5.77	9.04	3.63	30.32
66267	Analysis	6.20	10.03	3.25	32.15
66417	Analysis	5.68	9.40	3.39	30.26
	Federal 6-10-7 Guarantee	6.00	10.00	7.00	36.50
66041	Analysis	6.28	9.39	7.06	36.46
66425	Analysis	6.04	9.75	7.06	36.36
66445	Analysis	6.14	9.53	6.67	35.80
66517	Analysis	6.20	9.59	6.45	35.74
66703	Analysis	6.02	10.37	7.73	37.98
	Federal 6-12-6 Guarantee	6.00	12.00	6.00	37.80
66782	Analysis	5.86	12.30	5.66	37.41
66784	Analysis	5.86	12.26	5.64	37.33
Fidelity Chemical Corporation, Houston, Texas					
	Fert-Lome Guarantee	6.00	8.00	4.00	30.00
65815	Analysis	5.84	8.41	4.40	30.67
66329	Analysis	5.95	8.59	4.68	31.53
66647	Analysis	6.02	9.02	4.72	32.32
66652	Analysis	5.88	8.89	4.08	30.97
	Fidelity 0-12-4 Fertilizer Guarantee		12.00	4.00	20.80
66724	Analysis		11.38	4.32	20.41
	Fidelity 3-10-3 Fertilizer Guarantee	3.00	10.00	3.00	24.10
65873	Analysis	3.20	9.94	3.29	24.88
65963	Analysis	3.14	9.80	3.67	25.05
65997	Analysis	3.46	10.01	3.38	25.70
66272	Analysis	3.42	10.06	3.32	25.61
66305	Analysis	3.12	9.44	3.15	23.86
66330	Analysis	3.37	10.63	3.63	26.63
66413	Analysis	3.27	10.02	3.24	25.09
66717	Analysis	3.05	9.83	3.46	24.60
	Fidelity 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	25.20
65855	Analysis	4.12	7.44	4.32	25.18
65896	Analysis	3.85	7.49	4.31	24.58
65954	Analysis	4.47	7.66	3.93	25.50
65973	Analysis	4.56	8.04	4.06	26.67
65993	Analysis	4.16	7.45	4.16	25.03
66173	Analysis	4.08	8.04	4.20	25.70

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Fidelity Chemical Corporation, Houston, Texas					
Fidelity 4-8-4 Fertilizer Guarantee					
Continued—					
66331	Analysis	3.98	8.37	4.31	26.03
66414	Analysis	4.02	8.29	4.14	25.81
66440	Analysis	4.10	7.79	4.54	25.87
66716	Analysis	4.24	8.47	4.08	26.49
66725	Analysis	4.26	8.62	4.14	26.81
66761	Analysis	4.15	8.03	4.31	26.00
	Fidelity 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.80
65953	Analysis	4.36	8.81	5.30	28.80
65964	Analysis	4.18	7.96	7.14	29.66
66306	Analysis	4.18	8.09	6.37	28.83
66332	Analysis	4.17	8.02	6.05	28.31
	Fidelity 4-8-10 Fertilizer Guarantee	4.00	8.00	10.00	33.00
65856	Analysis	4.27	8.13	10.86	34.94
	Fidelity 4-10-0 Fertilizer Guarantee	4.00	10.00		22.60
66335	Analysis	4.24	9.82		22.95
66728	Analysis	4.15	9.85		22.77
	Fidelity 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	30.40
65890	Analysis	4.17	11.53	4.05	30.27
65949	Analysis	4.44	10.93	4.25	30.40
66283	Analysis	4.52	10.85	4.48	30.78
66295	Analysis	4.39	11.60	4.75	31.80
66298	Analysis	4.05	11.31	4.36	30.09
66334	Analysis	3.92	11.22	4.37	29.68
66411	Analysis	3.95	11.73	4.02	29.96
66441	Analysis	4.13	11.24	4.22	30.01
66714	Analysis	3.89	10.99	4.37	29.31
66727	Analysis	4.22	10.51	4.28	29.35
	Fidelity 5-15-5 Fertilizer Guarantee	5.00	15.00		31.50
65811	Analysis	5.36	15.12		32.52
	Fidelity 5-15-5 Fertilizer Guarantee	5.00	15.00	5.00	38.00
65810	Analysis	5.23	15.29	4.89	38.79
65864	Analysis	5.31	14.26	5.56	38.51
65875	Analysis	5.10	14.37	5.02	37.45
65919	Analysis	5.44	14.39	5.14	38.45
65950	Analysis	5.39	14.57	5.19	38.63
	Fidelity 6-9-3 Fertilizer Guarantee	6.00	9.00	3.00	30.00
65952	Analysis	6.03	9.62	3.30	31.27
65995	Analysis	6.09	9.20	3.30	30.87
66269	Analysis	6.26	9.45	3.65	32.06
66726	Analysis	5.82	8.78	3.16	29.49
	Fidelity 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	36.50
65874	Analysis	6.05	9.45	7.41	36.44
65920	Analysis	5.94	10.07	7.22	36.74
65951	Analysis	6.02	10.00	7.17	36.77
65994	Analysis	6.13	9.15	6.79	35.44
66274	Analysis	6.03	9.54	7.75	36.95
66412	Analysis	5.56	10.25	5.64	34.00
66715	Analysis	6.04	10.14	6.78	36.49
	Fidelity 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	37.80
65812	Analysis	6.18	12.01	6.08	38.34
65857	Analysis	6.06	11.17	6.02	36.89
65865	Analysis	5.93	11.17	5.89	36.41
65889	Analysis	6.26	10.82	6.12	37.05
65897	Analysis	6.24	11.63	6.18	38.13
65955	Analysis	6.14	11.30	6.25	37.56
65996	Analysis	6.13	11.32	6.23	37.53
66038	Analysis	6.08	11.20	6.22	37.24
66312	Analysis	6.21	11.44	6.37	38.05
66333	Analysis	6.18	11.81	6.18	38.21
66415	Analysis	6.21	11.38	6.50	38.14

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Fidelity Chemical Corporation, Houston, Texas—Continued					
Fidelity 6-12-6 Fertilizer Guarantee					
Continued—					
66760	Analysis	6.02	11.40	6.28	37.43
	Fidelity 10-20-10 Fertilizer Guarantee.....	10.00	20.00	10.00	63.00
65818	Analysis	7.94	18.56	11.07	57.60
65866	Analysis	8.10	18.18	8.04	53.52
66284	Analysis	10.00	20.56	9.83	63.51
	Fidelity 11-48-0 Fertilizer Guarantee	11.00	48.00		88.80
65808	Analysis	10.75	47.58		87.65
	Fidelity 20.5% Sulphate of Ammonia Guarantee.....	20.50			49.20
65906	Analysis	20.94			50.26
	Fidelity 18% Superphosphate Guarantee.....		18.00		23.40
65876	Analysis		20.40		26.52
65972	Analysis		21.07		27.39
	Fidelity 20% Superphosphate Guarantee.....		20.00		26.00
65814	Analysis		20.85		27.11
66262	Analysis		20.14		26.18
66759	Analysis		20.93		27.21
Ford Motor Company, Dearborn, Michigan					
	Ford Ammonium Sulphate Guarantee	20.80			49.92
65928	Analysis	20.88			50.11
66243	Analysis	21.04			50.50
66250	Analysis	20.93			50.23
Gilmer Cotton Oil & Fertilizer Company, Gilmer, Texas					
	Texas Longhorn Cotton Surecrop Guarantee	4.00	8.00	4.00	25.20
66206	Analysis	4.24	8.02	4.30	26.20
66533	Analysis	4.30	7.74	4.41	26.11
66537	Analysis	4.45	8.57	3.64	26.55
	Texas Longhorn Surecrop Early Fruiter Guarantee.....	6.00	9.00	3.00	30.00
66201	Analysis	6.06	9.19	3.38	30.88
	Texas Longhorn Surecrop Producer Guarantee.....	4.00	12.00	4.00	30.40
66536	Analysis	4.37	12.62	3.70	31.84
	Texas Longhorn Surecrop Truckers Best Guarantee.....	6.00	10.00	7.00	36.50
66203	Analysis	5.93	9.85	7.31	36.54
66538	Analysis	5.73	10.38	7.54	37.04
	Texas Longhorn Special Cotton Surecrop Guarantee....	6.00	12.00	6.00	37.80
66202	Analysis	6.29	11.99	6.21	38.76
	Texas Longhorn Superior Meal Cotton Surecrop Guarantee	3.00	10.00	3.00	24.10
66205	Analysis	3.29	10.35	3.37	25.74
	Texas Longhorn Tomato Surecrop Guarantee	4.00	8.00	6.00	27.80
66204	Analysis	4.29	8.07	6.49	29.23
66535	Analysis	4.17	9.01	6.18	29.75
Houston Cotton Oil Mill, Houston, Texas					
	Cotton Bloom Brand 4-10-0 Guarantee	4.00	10.00		22.60
66746	Analysis	3.88	9.88		22.15
International Agricultural Corporation, Texarkana, Arkansas— Texas					
	International 3-10-3 Fertilizer Guarantee	3.00	10.00	3.00	24.10
66589	Analysis	3.04	9.92	2.77	23.80
66590	Analysis	3.05	10.29	3.01	24.61
66615	Analysis	2.89	9.87	2.91	23.55
	International 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	25.20
66009	Analysis	4.08	7.58	4.14	25.02
66034	Analysis	4.20	8.19	4.30	26.32
66122	Analysis	4.00	7.95	4.18	25.37
66168	Analysis	4.13	8.50	4.12	26.32
66177	Analysis	4.08	7.72	4.04	25.08
66233	Analysis	3.93	8.47	4.04	25.69
66374	Analysis	4.05	8.16	4.08	25.63
66422	Analysis	4.01	7.88	4.08	25.16
66436	Analysis	4.18	8.28	4.07	26.08

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
International Agricultural Corporation, Texarkana, Arkansas- Texas—Continued					
International 4-8-4 Fertilizer Guarantee—Continued					
66484	Analysis	4.11	8.47	4.08	26.17
66492	Analysis	3.90	8.00	4.06	25.04
66561	Analysis	4.31	8.34	4.05	26.45
66571	Analysis	3.88	8.26	4.13	25.42
66599	Analysis	4.19	8.43	4.08	26.32
66614	Analysis	4.06	8.27	4.23	25.99
66696	Analysis	4.25	8.48	4.46	27.02
International 4-8-6 Truck Fertilizer Guarantee		4.00	8.00	6.00	27.80
66121	Analysis	4.02	7.86	6.29	28.05
66163	Analysis	4.17	7.61	6.04	27.75
66167	Analysis	4.01	8.31	6.18	28.45
66219	Analysis	4.11	8.01	6.04	28.12
66459	Analysis	4.86	8.71	6.29	31.16
66559	Analysis	3.95	8.34	6.18	28.35
66572	Analysis	4.09	8.51	5.89	28.42
66596	Analysis	4.01	8.57	6.03	28.60
66620	Analysis	4.10	8.44	6.11	28.75
International 4-8-10 Fertilizer Guarantee		4.00	8.00	10.00	33.00
66190	Analysis	4.04	8.10	9.83	33.61
66591	Analysis	4.00	7.97	9.90	32.83
International 4-10-0 Ammoniated Compound Guarantee		4.00	10.00		22.60
66010	Analysis	4.20	10.32		23.50
International 4-12-4 Fertilizer Guarantee		4.00	12.00	4.00	30.40
66377	Analysis	4.06	11.88	4.28	30.74
66401	Analysis	4.24	11.71	4.55	31.81
66592	Analysis	4.00	12.55	4.14	31.30
International 4-12-4 Rainbow Cotton Fertilizer Guarantee		4.00	12.00	4.00	30.40
66434	Analysis	4.02	12.25	4.10	30.91
66588	Analysis	4.04	12.39	4.02	31.04
66594	Analysis	4.14	12.47	4.03	31.39
66639	Analysis	4.06	12.29	4.02	30.95
66643	Analysis	4.06	12.45	4.04	31.18
66695	Analysis	4.10	12.09	3.94	30.68
International 6-8-4 Fertilizer Guarantee		6.00	8.00	4.00	30.00
66570	Analysis	6.07	8.33	3.73	30.25
66598	Analysis	6.08	9.05	4.11	31.70
66777	Analysis	5.80	8.32	3.96	29.89
International 6-8-8 Fertilizer Guarantee		6.00	8.00	8.00	35.20
66166	Analysis	6.08	8.09	8.02	35.54
66191	Analysis	6.17	8.34	7.33	35.18
International 6-9-3 Fertilizer Guarantee		6.00	9.00	3.00	30.00
66600	Analysis	6.09	9.75	3.14	31.88
66640	Analysis	5.95	8.78	3.25	29.92
International 6-10-7 Fertilizer Guarantee		6.00	10.00	7.00	36.50
66011	Analysis	5.95	9.68	6.82	35.73
66033	Analysis	6.13	10.66	7.22	37.96
66400	Analysis	6.15	10.15	7.44	37.63
66433	Analysis	6.05	10.25	7.14	37.13
66597	Analysis	6.11	9.86	7.46	37.18
International 6-12-6 Fertilizer Guarantee		6.00	12.00	6.00	37.80
66120	Analysis	6.06	12.63	6.34	39.20
66178	Analysis	6.16	12.23	6.40	39.00
66473	Analysis	6.08	12.61	6.14	38.96
66493	Analysis	6.14	12.30	6.24	38.84
66601	Analysis	6.15	12.42	6.27	39.06
66642	Analysis	5.91	12.47	6.20	38.45
International 8-8-8 Fertilizer Guarantee		8.00	8.00	8.00	40.00
66192	Analysis	7.89	8.34	7.57	39.62
66593	Analysis	7.85	8.34	8.04	40.12
International 10-0-10 Top Dresser Guarantee		10.00		10.00	37.00

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
International Agricultural Corporation, Texarkana, Arkansas— Texas—Continued					
International 10-0-10 Top Dresser Guarantee—Continued					
66595	Analysis	10.08		10.03	37.23
	International Concentrated 10-20-10 Fertilizer Guarantee	10.00	20.00	10.00	63.00
66179	Analysis	9.77	20.21	10.61	63.51
Interstate By-Products and Supply Co., Fort Worth, Texas					
	Interstate Lawn Fertilizer 10-10-0 Guarantee	10.00	10.00		37.00
66654	Analysis	10.68	9.15		37.51
Jacksonville Fertilizer Company, Jacksonville, Texas					
	Red Tomato 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.80
66468	Analysis	3.81	8.33	6.53	28.46
	Red Tomato 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	30.40
66048	Analysis	4.42	13.85	4.34	34.26
	Red Tomato 6-8-4 Fertilizer Guarantee	6.00	8.00	4.00	30.00
66472	Analysis	6.38	6.62	4.59	29.89
	Red Tomato 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	36.50
66470	Analysis	6.08	9.58	6.80	35.38
	Red Tomato 8-8-8 Fertilizer Guarantee	8.00	8.00	8.00	40.00
66469	Analysis	8.55	8.13	8.47	42.10
Kelly-Weber Company, Inc., Lake Charles, Louisiana.					
	Weber-King Brand Fertilizer Special 0-12-4 Guarantee		12.00	4.00	20.80
66753	Analysis		12.78	4.00	21.81
	Weber-King Brand Fertilizer Special 3-10-3 Guarantee	3.00	10.00	3.00	24.10
66767	Analysis	3.06	9.57	3.58	24.43
	Weber-King Brand Fertilizer Special 4-8-4 Guarantee	4.00	8.00	4.00	25.20
66368	Analysis	3.96	8.68	4.21	26.25
	Weber-King Brand Fertilizer Special 4-10-0 Guarantee	4.00	10.00		22.60
66347	Analysis	4.56	8.99		22.63
66748	Analysis	4.05	9.29		21.80
66754	Analysis	4.15	9.54		22.36
	Weber-King Brand Fertilizer Special 4-12-4 Guarantee	4.00	12.00	4.00	30.40
66369	Analysis	3.85	12.02	4.25	30.40
66752	Analysis	3.90	10.69	4.15	28.66
Longview Cotton Oil Company, Longview, Texas					
	Longview Cotton and Corn Special Fertilizer Guarantee	4.00	12.00	4.00	30.40
66137	Analysis	4.07	11.42	4.21	30.09
66520	Analysis	4.03	11.43	4.32	30.15
	Longview Crop Special Fertilizer Guarantee	6.00	9.00	3.00	30.00
66134	Analysis	5.53	8.63	3.55	29.11
66522	Analysis	5.75	8.32	3.46	29.12
	Longview Gregg County Special Guarantee	4.00	8.00	4.00	25.20
66136	Analysis	3.68	6.94	3.86	22.87
66794	Analysis	4.02	7.68	4.41	25.36
	Longview Potash Special Guarantee		12.00	4.00	20.80
66519	Analysis		12.10	4.03	20.97
	Longview Prize Fertilizer Guarantee	6.00	12.00	6.00	37.80
66133	Analysis	6.08	12.10	5.57	37.56
66793	Analysis	5.95	12.79	5.52	38.09
	Longview Prolific Fertilizer Guarantee	6.00	8.00	4.00	30.00
66139	Analysis	5.28	7.60	3.94	27.67
66521	Analysis	5.08	8.02	3.82	27.59
	Longview Truck Special Fertilizer Guarantee	4.00	8.00	6.00	27.80
66135	Analysis	3.70	8.15	5.87	27.11
66792	Analysis	4.05	7.61	6.94	28.63
	Longview Vegetable Fertilizer Guarantee	6.00	10.00	7.00	36.50
66138	Analysis	5.66	9.06	7.93	35.67
Marshall Cotton Oil Company, Marshall, Texas					
	Marshall 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	25.20
66151	Analysis	3.85	7.76	4.12	24.69
66378	Analysis	3.92	8.20	4.35	25.73
66786	Analysis	4.09	8.27	4.04	25.82
	Marshall 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.80

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Marshall Cotton Oil Company, Marshall, Texas—Continued					
Marshall 4-8-6 Fertilizer Guarantee					
Continued—					
66149	Analysis	4.03	7.91	6.27	28.10
66789	Analysis	4.09	8.96	5.61	28.76
Marshall 4-12-4 Fertilizer Guarantee					
66150	Analysis	4.00	12.00	4.00	30.40
66531	Analysis	3.87	12.54	5.05	32.15
Marshall 6-8-4 Fertilizer Guarantee					
66787	Analysis	3.82	12.30	3.67	29.93
Marshall 6-8-8 Fertilizer Guarantee					
66146	Analysis	6.00	8.00	4.00	30.00
Marshall 6-9-3 Fertilizer Guarantee					
66147	Analysis	5.99	8.51	4.51	31.30
66530	Analysis	6.00	8.00	8.00	35.20
66785	Analysis	5.62	7.38	9.02	34.81
Marshall 6-12-6 Fertilizer Guarantee					
66148	Analysis	6.00	9.00	3.00	30.00
66379	Analysis	6.01	9.18	3.42	30.80
66532	Analysis	5.77	9.39	3.17	30.18
66788	Analysis	5.88	9.35	3.09	30.29
Mixon Brothers, Kirbyville, Texas					
Jasco Brand Special No. 3-10-3 Guarantee					
66148	Analysis	6.00	12.00	6.00	37.80
66379	Analysis	6.31	12.08	6.44	39.27
66532	Analysis	6.11	11.71	6.01	37.69
66788	Analysis	6.00	12.22	5.77	37.79
Jasco Brand Special No. 4-8-4 Guarantee					
66149	Analysis	5.66	12.86	5.73	37.75
Jasco Brand Special No. 4-8-6 Guarantee					
66358	Analysis	3.00	10.00	3.00	24.10
65978	Analysis	3.33	9.83	3.38	25.16
66361	Analysis	4.00	8.00	4.00	25.20
66762	Analysis	4.16	7.76	4.26	25.61
Jasco Brand Special No. 4-8-10 Guarantee					
65974	Analysis	4.14	7.60	4.03	25.06
Jasco Brand Special No. 4-12-4 Guarantee					
65979	Analysis	3.77	8.42	4.26	25.54
Jasco Brand Special No. 6-10-7 Guarantee					
65977	Analysis	4.00	8.00	6.00	27.80
66345	Analysis	4.48	8.48	5.56	29.00
66359	Analysis	4.00	8.00	10.00	33.00
66764	Analysis	4.19	7.60	10.06	33.02
Jasco Brand Special No. 6-12-6 Guarantee					
65975	Analysis	4.00	12.00	4.00	30.40
66360	Analysis	4.02	11.70	4.13	30.23
66765	Analysis	3.57	12.78	3.70	29.99
Jasco Brand Special No. 6-12-6 Guarantee					
65976	Analysis	4.17	10.77	4.59	29.98
66357	Analysis	4.23	11.40	4.02	30.20
66763	Analysis	6.00	10.00	7.00	36.50
Mueller-Huber Grain Company, San Antonio, Texas					
Bat Guano 10-3-1 Fertilizer Guarantee					
65975	Analysis	5.66	10.08	7.15	35.98
Nicholson's Seed Store, Dallas, Texas					
Nicholson's All-Round Fertilizer Guarantee					
66360	Analysis	5.23	10.48	6.86	35.09
66646	Analysis	5.50	10.32	7.25	36.05
Oil Mill and Fertilizer Company, Henderson, Texas					
Wolf Brand Fertilizer 3-10-3 Guarantee					
65976	Analysis	6.00	12.00	6.00	37.50
66127	Analysis	6.28	11.88	6.21	38.58
66128	Analysis	6.07	11.46	6.72	38.21
66481	Analysis	5.79	12.16	6.14	37.69
Wolf Brand Fertilizer 4-8-4 Guarantee					
66495	Analysis	10.00	3.00	1.00	29.20
66772	Analysis	10.75	3.79	1.27	32.38
Nicholson's Evergreen Lawn Dressing Guarantee					
66242	Analysis	4.00	12.00	4.00	30.40
66241	Analysis	4.57	9.42	4.07	28.51
66646	Analysis	10.00	6.00	4.00	37.00
Wolf Brand Fertilizer 4-8-6 Guarantee					
66772	Analysis	10.34	6.43	4.55	39.36
	Analysis	10.33	6.60	3.83	38.09

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Oil Mill and Fertilizer Company, Henderson, Texas—Cont'd.					
Wolf Brand Fertilizer 4-8-6 Guarantee					
Continued—					
66125	Analysis	4.02	8.11	6.05	28.06
66482	Analysis	3.88	8.19	5.58	27.21
66494	Analysis	3.84	7.72	5.72	26.70
	Wolf Brand Fertilizer 4-12-4 Guarantee.....	4.00	12.00	4.00	30.40
66123	Analysis	3.89	12.11	4.06	30.36
66774	Analysis	4.43	12.11	4.04	31.62
	Wolf Brand Fertilizer 6-8-4 Guarantee.....	6.00	8.00	4.00	30.00
66372	Analysis	4.87	9.07	4.56	29.41
	Wolf Brand Fertilizer 6-10-7 Guarantee.....	6.00	10.00	7.00	36.50
66124	Analysis	5.76	10.69	6.47	36.13
	Wolf Brand Fertilizer 6-12-6 Guarantee.....	6.00	12.00	6.00	37.80
66126	Analysis	5.72	11.65	5.74	36.34
66483	Analysis	5.75	12.15	5.71	37.02
66773	Analysis	5.35	12.07	5.49	35.67
Pate Bros. Fertilizer Works, Sulphur Springs, Texas					
	Pate's Red Star Brand 3-10-3 Fertilizer Guarantee....	3.00	10.00	3.00	24.10
66228	Analysis	3.30	7.71	3.37	22.32
66649	Analysis	2.86	9.83	2.76	23.23
	Pate's Red Star Brand 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	25.20
66200	Analysis	4.23	7.80	4.03	25.53
	Pate's Red Star Brand 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	27.80
66180	Analysis	4.18	7.29	6.04	27.36
66199	Analysis	4.12	7.61	6.44	28.15
66224	Analysis	4.08	7.55	6.31	27.81
66612	Analysis	4.25	7.73	6.05	28.12
	Pate's Red Star Brand 4-8-10 Fertilizer Guarantee.....	4.00	8.00	10.00	33.00
66226	Analysis	3.98	8.09	10.41	33.60
	Pate's Red Star Brand 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	30.40
66225	Analysis	4.55	8.54	4.24	27.53
66650	Analysis	3.97	11.26	4.09	29.49
	Pate's Red Star Brand 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	36.50
66227	Analysis	6.37	9.21	7.47	36.97
66622	Analysis	6.09	9.34	7.18	36.09
	Pate's Red Star Brand 6-12-6 Fertilizer Guarantee.....	6.00	12.00	6.00	37.80
66223	Analysis	6.29	11.06	6.27	37.63
66621	Analysis	5.99	12.13	6.06	38.03
Pecos Orla Sulphur Company, Orla, Texas					
	Sulphur Earth Guarantee*				
65854	Analysis**				
Pittsburg Cotton Oil Company, Pittsburg, Texas					
	4-8-4 Double Circle Fertilizer Guarantee.....	4.00	8.00	4.00	25.20
66198	Analysis	4.09	8.59	3.79	25.92
	4-8-6 Double Circle Fertilizer Guarantee.....	4.00	8.00	6.00	27.80
66195	Analysis	4.30	8.00	4.84	27.01
66545	Analysis	4.15	8.06	6.04	28.29
	4-8-10 Double Circle Fertilizer Guarantee.....	4.00	8.00	10.00	33.00
66197	Analysis	4.16	7.74	9.25	32.07
	4-10-0 Double Circle Fertilizer Guarantee.....	4.00	10.00		22.60
66194	Analysis	4.19	10.02		23.09
	4-12-4 Double Circle Fertilizer Guarantee	4.00	12.00	4.00	30.40
66543	Analysis	4.12	11.46	4.20	30.25
	6-8-8 Double Circle Fertilizer Guarantee	6.00	8.00	8.00	35.20
66544	Analysis	6.16	8.24	6.72	34.23
	6-9-3 Double Circle Fertilizer Guarantee.....	6.00	9.00	3.00	30.00
66196	Analysis	6.10	9.55	3.17	31.18
	6-10-7 Double Circle Fertilizer Guarantee.....	6.00	10.00	7.00	36.50
66153	Analysis	6.08	10.01	6.44	35.97
66193	Analysis	5.98	9.38	5.95	34.28
66546	Analysis	6.16	9.58	6.42	35.58

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Pittsburg Cotton Oil Company, Pittsburg, Texas—Continued					
6-10-7 Double Circle Fertilizer Guarantee					
Continued—					
		Sulphate as Sulphur	Residual Sulphur	Sulphur as H ₂ SO ₄	Sulphur
*Guarantee	6.00		2.50	10.00
**Analysis	3.78	7.32		
Port Fertilizer Company, Los Fresnos, Texas					
	Valley Port Brand 5-15-5 Fertilizer Guarantee.....		5.00	15.00	5.00 38.00
65835	Analysis		5.81	14.81	5.59 40.46
65843	Analysis		5.60	12.83	6.45 38.51
	Valley Port Brand 10-10-0 Fertilizer Guarantee		10.00	10.00	37.00
65832	Analysis		9.07	12.18	37.60
	Valley Port Brand Sulphate of Ammonia Guarantee.....		20.50		49.20
65825	Analysis		20.66		49.58
	Valley Port Brand 20% Superphosphate Guarantee.....			20.00	26.00
65904	Analysis			21.71	28.22
	Valley Port Brand 32% Superphosphate Guarantee.....			32.00	41.60
65833	Analysis			32.14	41.78
65901	Analysis			32.07	41.69
The Pulverized Manure Company, Chicago, Illinois					
	Wizard Brand Pulverized Sheep Manure Guarantee.....		2.00	1.00	2.00 8.70
66240	Analysis		1.80	1.66	3.87 11.51
Sewerage Commission of the City of Milwaukee, Milwaukee, Wisconsin					
	Milwaukee Milorganite Ideal Lawn & Garden Fertilizer Guarantee		6.00	2.00	17.00
66251	Analysis		6.06	1.99	17.13
66658	Analysis		5.96	2.61	17.69
L. W. Shaffer Company, San Juan, Texas					
	Soft Phosphate with Colloidal Clay with Nitrogen Guarantee		3.00	1.00	8.50
65826	Analysis		4.50	.88	11.94
Shreveport Fertilizer Works, Shreveport, Louisiana					
	Lion 4-8-4 Fertilizer Guarantee.....		4.00	8.00	4.00 25.20
66069	Analysis		4.35	8.48	4.27 27.01
66171	Analysis		4.26	8.34	4.04 26.31
66207	Analysis		4.15	8.14	4.06 25.82
66392	Analysis		4.03	8.06	4.24 25.66
66476	Analysis		4.02	8.30	4.02 25.67
66488	Analysis		3.92	8.47	3.98 25.59
66770	Analysis		4.10	8.79	3.65 26.02
	Lion 4-8-6 Fertilizer Guarantee		4.00	8.00	6.00 27.80
66068	Analysis		4.46	8.87	6.33 30.46
66172	Analysis		4.04	8.67	5.81 28.52
66175	Analysis		3.97	8.21	5.88 27.84
66208	Analysis		3.72	6.97	6.12 25.95
66343	Analysis		4.02	8.81	5.54 28.30
	Lion 4-12-4 Fertilizer Guarantee.....		4.00	12.00	4.00 30.40
66294	Analysis		4.15	12.43	3.78 31.03
66354	Analysis		3.98	12.37	4.48 31.45
66364	Analysis		4.51	12.14	4.28 32.16
66641	Analysis		3.94	12.57	3.74 30.66
	Lion N.P.K. 23 Fertilizer Guarantee.....		6.00	10.00	7.00 36.50
66344	Analysis		6.42	10.14	7.55 38.41
66569	Analysis		6.07	10.58	7.44 37.99
66771	Analysis		6.28	10.03	6.78 36.92
	Longhorn 3-10-3 Meal Formula Guarantee.....		3.00	10.00	3.00 24.10
66362	Analysis		3.27	10.18	3.44 25.55
	Longhorn 4-8-4 Fertilizer Guarantee.....		4.00	8.00	4.00 25.20
66107	Analysis		4.06	7.52	4.33 25.15

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Shreveport Fertilizer Works, Shreveport, Louisiana—Cont'd.					
Longhorn 4-8-4 Fertilizer Guarantee					
Continued—					
66129	Analysis	4.07	7.84	4.32	25.58
66363	Analysis	4.05	7.80	4.36	25.53
66719	Analysis	3.70	9.62	2.89	25.15
Longhorn 4-8-6 Fertilizer Guarantee					
66006	Analysis	4.00	8.00	6.00	27.80
66067	Analysis	3.94	7.81	5.81	27.16
66140	Analysis	4.04	8.42	5.47	27.76
66769	Analysis	3.85	8.08	6.26	27.88
Longhorn 4-12-4 Fertilizer Guarantee					
65986	Analysis	4.04	8.42	6.02	28.48
66390	Analysis	4.00	12.00	4.00	30.40
Longhorn 6-8-4 Fertilizer Guarantee					
65987	Analysis	3.96	12.05	3.86	30.19
Longhorn 6-8-8 Fertilizer Guarantee					
66109	Analysis	3.99	12.22	3.68	30.25
Longhorn 6-9-3 Fertilizer Guarantee					
66110	Analysis	6.00	8.00	4.00	30.00
66391	Analysis	5.33	8.10	4.29	28.90
Longhorn 6-12-5 Fertilizer Guarantee					
65985	Analysis	6.00	8.00	8.00	35.20
66108	Analysis	5.96	8.79	7.27	35.18
Longhorn N.P.K. 23 Fertilizer Guarantee					
66005	Analysis	6.00	9.00	3.00	30.00
66066	Analysis	5.67	9.77	3.31	30.61
66106	Analysis	5.60	9.07	3.50	29.78
66395	Analysis	6.00	12.00	6.00	37.80
66675	Analysis	5.98	11.04	5.24	35.51
66768	Analysis	6.08	12.13	6.05	38.23
Longhorn 20% Superphosphate Guarantee					
66718	Analysis	6.00	10.00	7.00	36.50
Southwestern Peanut Growers Association, Gorman, Texas					
Pabak Brand 4-8-4 Fertilizer Guarantee					
66245	Analysis	6.40	10.29	7.56	38.57
66405	Analysis	6.09	10.32	7.46	37.74
66659	Analysis	6.33	10.01	7.73	38.25
Pabak Brand 4-12-4 Fertilizer Guarantee					
66246	Analysis	6.14	10.06	7.40	37.44
66403	Analysis	6.19	10.21	6.71	36.85
66662	Analysis	6.72	10.33	6.35	37.82
Pabak Brand 6-9-4 Fertilizer Guarantee					
66247	Analysis	20.00			26.00
66404	Analysis	20.84			27.09
66661	Analysis	19.85			25.81
Pabak Brand 20% Superphosphate Guarantee					
66406	Analysis				
66660	Analysis				
Swift & Company Fertilizer Works, Harvey and Shreveport, Louisiana, and Houston, Texas					
Sulphate of Ammonia 20.5% guarantee					
65798	Analysis	20.50			49.20
Sulphate of Potash Guarantee					
65822	Analysis	20.44			49.06
Swift's KO Non-Acid Forming 6-8-8 Guarantee					
65803	Analysis	6.00	8.00	8.00	35.20
65809	Analysis	6.07	7.77	8.02	35.10
65837	Analysis	6.18	8.40	8.09	36.27
65862	Analysis	5.83	7.81	4.30	29.73
65880	Analysis	5.95	7.86	8.03	34.94
65887	Analysis	6.02	7.89	7.85	34.92
65893	Analysis	6.04	7.68	8.02	34.91
	Analysis	6.00	7.68	7.66	34.34

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Swift & Company Fertilizer Works, Harvey and Shreveport, Louisiana, and Houston, Texas—Continued					
Swift's OK Non-Acid Forming 6-8-8 Guarantee—Continued					
65931	Analysis	5.98	7.72	7.58	34.24
65941	Analysis	5.82	8.00	7.41	34.00
65989	Analysis	6.19	8.43	6.47	34.23
66014	Analysis	6.04	7.90	7.75	34.85
66084	Analysis	6.10	8.02	8.08	35.57
66115	Analysis	5.92	7.81	8.13	34.93
66185	Analysis	6.03	8.01	8.18	35.51
66212	Analysis	5.89	7.86	7.86	34.58
66513	Analysis	6.08	8.08	7.93	35.40
66548	Analysis	5.81	7.86	8.02	34.59
66565	Analysis	6.01	8.09	8.04	35.39
66668	Analysis	5.68	8.02	7.61	33.95
66673	Analysis	5.99	7.79	7.86	34.73
66704	Analysis	5.80	8.15	7.74	34.58
Swift's pH 7 5-8-4 Guarantee		6.00	8.00	4.00	30.00
65786	Analysis	6.24	8.34	4.02	31.05
65821	Analysis	6.34	8.33	4.27	31.60
65823	Analysis	6.09	8.39	4.33	31.16
65836	Analysis	5.85	8.16	4.02	29.88
65844	Analysis	5.77	8.09	4.11	29.71
65846	Analysis	6.27	8.30	4.11	31.18
65863	Analysis	6.10	7.73	3.99	29.88
65884	Analysis	6.11	7.94	4.06	30.26
65888	Analysis	5.58	7.87	4.04	28.87
65892	Analysis	6.04	4.00	4.06	29.79
65922	Analysis	6.26	7.78	4.08	30.43
65932	Analysis	6.08	7.78	4.05	29.97
65942	Analysis	5.73	7.95	4.13	29.46
66007	Analysis	6.23	7.84	4.06	30.42
66036	Analysis	5.69	8.07	3.91	29.23
66056	Analysis	6.11	7.73	4.06	29.99
66083	Analysis	6.08	7.69	4.17	30.01
66097	Analysis	6.24	7.83	4.06	30.44
66145	Analysis	6.04	7.44	4.25	29.70
66158	Analysis	5.58	8.17	3.97	29.17
66231	Analysis	5.96	7.72	4.02	29.57
66263	Analysis	5.88	8.23	3.73	29.66
66307	Analysis	5.75	8.02	4.02	29.46
66337	Analysis	5.79	8.16	3.35	28.87
66338	Analysis	5.35	8.52	4.63	29.94
66448	Analysis	5.90	8.24	4.24	30.39
66477	Analysis	5.97	8.34	4.13	30.54
66564	Analysis	6.00	7.90	4.03	29.91
66602	Analysis	6.02	7.62	4.15	29.76
66623	Analysis	6.00	7.77	4.20	29.96
66648	Analysis	5.95	8.19	4.25	30.46
66663	Analysis	6.04	7.77	4.07	29.89
66674	Analysis	6.02	7.73	4.02	29.73
66720	Analysis	6.11	7.74	4.04	29.97
Swift's Red Steer Brand 4-8-4 Guarantee		4.00	8.00	4.00	25.20
65895	Analysis	3.78	8.04	3.80	24.46
65940	Analysis	4.00	7.66	4.57	25.50
65967	Analysis	3.95	7.50	4.18	24.66
65984	Analysis	4.12	8.19	4.32	26.16
65991	Analysis	4.31	8.07	3.88	25.87
66008	Analysis	3.88	8.03	4.04	25.00
66025	Analysis	4.17	8.38	4.37	26.58
66060	Analysis	4.47	8.38	4.00	26.82
66117	Analysis	4.24	8.49	4.28	26.78
66159	Analysis	4.01	8.08	3.86	25.14

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Swift & Company Fertilizer Works, Harvey and Shreveport, Louisiana, and Houston, Texas—Continued					
Swift's Red Star Brand 4-8-4 Guarantee—Continued					
66184	Analysis	3.92	7.61	4.07	24.59
66259	Analysis	4.31	8.29	4.01	26.33
66278	Analysis	4.01	8.00	3.75	24.90
66382	Analysis	4.14	8.03	4.06	25.66
66410	Analysis	3.99	7.84	4.05	25.04
66436	Analysis	3.92	8.26	4.02	25.38
66485	Analysis	4.32	7.96	4.42	26.47
66490	Analysis	4.14	8.11	4.14	25.56
66540	Analysis	3.95	8.21	4.03	25.39
66547	Analysis	4.06	8.56	4.07	26.16
66578	Analysis	4.02	8.60	4.03	26.07
66583	Analysis	4.12	9.55	4.28	27.87
66585	Analysis	3.85	8.02	3.83	24.65
66637	Analysis	3.82	8.51	4.04	25.48
66734	Analysis	3.90	8.59	3.46	25.03
66776	Analysis	4.12	8.01	4.14	25.68
Swift's Red Steer Brand 4-8-6 Guarantee.....		4.00	8.00	6.00	27.80
66054	Analysis	3.76	8.20	4.80	25.92
66082	Analysis	4.10	8.23	6.05	28.41
66094	Analysis	4.08	7.30	6.51	27.74
66116	Analysis	4.01	7.08	6.12	26.78
66162	Analysis	3.94	7.50	5.84	26.80
66183	Analysis	4.15	7.59	6.03	27.67
66387	Analysis	4.14	8.06	6.06	28.30
66515	Analysis	4.00	8.25	5.56	27.56
66582	Analysis	3.94	7.49	6.04	27.05
66613	Analysis	4.00	8.20	6.17	28.28
66638	Analysis	4.06	7.55	5.89	27.22
66681	Analysis	4.00	7.58	6.10	27.38
Swift's Red Steer Brand 4-8-10 Fertilizer Guarantee....		4.00	8.00	10.00	33.00
65956	Analysis	4.06	7.97	7.64	30.03
Swift's Red Steer Brand 4-10-0 Fertilizer Guarantee....		4.00	10.00		22.60
66013	Analysis	4.27	10.07		23.34
66037	Analysis	3.94	9.18		21.39
66061	Analysis	4.13	10.18		23.14
Swift's Red Steer Brand 4-12-4 Guarantee.....		4.00	12.00	4.00	30.40
65781	Analysis	6.19	9.92	3.63	32.48
65879	Analysis	3.86	10.65	4.05	28.38
65983	Analysis	4.00	12.37	4.02	30.91
65992	Analysis	4.24	12.06	4.07	31.15
66024	Analysis	3.86	11.25	3.81	28.84
66055	Analysis	4.18	11.69	4.03	30.47
66096	Analysis	3.92	11.25	4.05	29.31
66248	Analysis	4.30	11.39	4.29	30.71
66260	Analysis	4.07	12.19	3.73	30.47
66266	Analysis	3.87	11.79	3.66	29.38
66282	Analysis	4.32	11.48	4.05	30.56
66293	Analysis	3.91	11.86	3.87	29.33
66304	Analysis	3.81	12.54	3.75	30.32
66341	Analysis	4.35	11.61	4.54	31.43
66449	Analysis	4.02	10.13	4.10	28.15
66489	Analysis	3.96	12.65	4.19	31.40
66514	Analysis	4.18	12.27	4.14	31.36
66584	Analysis	3.94	11.58	3.85	29.52
66672	Analysis	4.40	11.77	4.17	31.28
66680	Analysis	4.29	12.15	4.14	31.48
66735	Analysis	3.79	12.33	5.43	32.19
66757	Analysis	4.16	11.57	4.14	30.40
Swift's Red Steer Brand 5-15-0 Guarantee.....		5.00	15.00		31.50
65799	Analysis	4.28	14.31		28.87

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Swift & Company Fertilizer Works, Harvey and Shreveport, Louisiana, and Houston, Texas—Continued					
Swift's Red Star Brand 5-15-0 Guarantee—Continued					
	Swift's Red Steer Brand 5-15-5 Guarantee.....	5.00	15.00	5.00	38.00
65870	Analysis	4.98	13.86	5.29	36.85
65883	Analysis	4.93	13.97	5.37	36.97
65894	Analysis	4.77	12.50	4.90	34.07
65930	Analysis	4.54	13.39	4.91	34.69
	Swift's Red Steer Brand 6-8-4 Guarantee.....	6.00	8.00	4.00	30.00
66383	Analysis	5.94	8.10	4.21	30.26
	Swift's Red Steer Brand 6-9-3 Guarantee	6.00	9.00	3.00	30.00
66119	Analysis	5.96	8.97	3.26	29.97
66380	Analysis	5.68	9.03	3.34	29.71
66418	Analysis	5.73	9.01	3.03	29.40
	Swift's Red Steer Brand 6-10-7 Guarantee.....	6.00	10.00	7.00	36.60
65780	Analysis	5.52	10.05	6.41	34.65
65871	Analysis	5.72	9.70	6.70	35.05
65881	Analysis	5.65	9.59	6.61	34.62
65968	Analysis	5.76	9.69	6.75	35.20
65990	Analysis	5.57	9.69	6.64	34.06
66012	Analysis	5.75	9.45	6.90	35.06
66118	Analysis	6.00	9.63	7.20	36.28
66346	Analysis	5.61	10.69	6.53	35.85
66419	Analysis	5.63	9.41	6.39	34.05
66478	Analysis	5.69	9.71	7.34	35.82
66586	Analysis	5.46	9.72	8.64	36.97
66679	Analysis	5.89	10.07	7.01	36.34
66705	Analysis	5.65	9.40	6.06	33.66
66775	Analysis	5.88	10.31	7.06	36.69
	Swift's Red Steer Brand 6-12-6 Guarantee.....	6.00	12.00	6.00	37.80
65796	Analysis	6.22	11.79	6.35	38.52
65882	Analysis	5.98	11.34	5.83	36.67
65891	Analysis	5.76	11.28	6.10	36.41
65969	Analysis	5.77	10.85	5.84	35.55
66059	Analysis	6.18	11.45	6.04	37.57
66095	Analysis	6.05	11.41	6.21	37.42
66277	Analysis	6.25	11.35	5.68	37.14
66353	Analysis	5.77	13.04	6.04	38.65
66426	Analysis	6.08	12.15	6.08	38.29
66486	Analysis	5.70	12.58	5.90	37.70
66577	Analysis	5.78	11.58	6.04	36.77
66657	Analysis	5.91	12.16	6.13	37.96
66758	Analysis	6.04	12.03	5.94	37.86
	Swift's Red Steer Brand Rice Mixture 4-10-0 Guarantee	4.00	10.00		22.60
66747	Analysis	4.16	8.40		20.90
	Swift's Red Steer Brand Superphosphate 20% Guarantee		20.00		26.00
65788	Analysis		20.40		26.52
	Vigoro Guarantee	4.00	12.00	4.00	30.40
65824	Analysis	4.36	10.82	4.47	30.34
65845	Analysis	4.14	10.88	4.20	29.54
65902	Analysis	4.49	10.52	4.61	30.45
65934	Analysis	4.42	12.33	4.52	32.52
66336	Analysis	4.20	11.59	4.51	31.01
66651	Analysis	4.38	11.65	4.47	31.48
Temple Cotton Oil Company, North Little Rock, Arkansas					
	Quapaw 4-8-4 Guarantee.....	4.00	8.00	4.00	25.20
66560	Analysis	3.99	8.13	3.79	25.08
66607	Analysis	3.92	8.53	3.54	25.10
	Quapaw 4-8-6 Guarantee.....	4.00	8.00	6.00	27.80
66161	Analysis	4.06	7.59	6.31	27.81
66165	Analysis	4.00	7.53	5.64	26.72
66553	Analysis	3.65	8.03	4.99	25.69
66604	Analysis	3.92	8.55	5.00	27.03

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Temple Cotton Oil Company, North Little Rock, Arkansas—Cont'd.					
Quapaw 4-8-6 Guarantee					
Continued—					
66606	Quapaw 4-12-4 Guarantee	4.00	12.00	4.00	30.40
	Analysis	4.11	12.39	2.48	29.19
66164	Quapaw 6-10-7 Guarantee.....	6.00	10.00	7.00	36.50
66176	Analysis	5.06	9.34	7.88	34.52
66605	Analysis	5.72	9.43	7.13	35.26
	Analysis	6.08	10.40	7.19	37.46
	Quapaw 6-12-6 Guarantee	6.00	12.00	6.00	37.80
66160	Analysis	6.00	13.40	6.21	39.89
66603	Analysis	6.09	11.26	5.82	36.83
Texas Farm Products Company, Nacogdoches, Texas					
	Lone Star Brand 3-10-3 Fertilizer Guarantee.....	3.00	10.00	3.00	24.10
66265	Analysis	3.04	9.59	3.26	24.01
66273	Analysis	3.10	9.64	3.31	24.27
66316	Analysis	3.16	10.06	3.20	24.82
	Lone Star Brand 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	25.20
65982	Analysis	4.15	8.06	4.22	25.93
65998	Analysis	4.03	7.65	4.04	24.87
66057	Analysis	4.16	8.07	4.06	25.75
66285	Analysis	4.10	8.30	4.32	26.25
66303	Analysis	4.15	8.09	4.37	26.16
66381	Analysis	4.03	8.20	3.90	25.40
66394	Analysis	3.81	8.02	3.88	24.61
66431	Analysis	4.03	7.76	4.48	25.58
66467	Analysis	3.92	7.68	4.02	24.62
66566	Analysis	4.11	8.12	4.12	25.78
66708	Analysis	4.11	7.77	4.08	25.26
	Lone Star Brand 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	27.80
66000	Analysis	4.08	7.59	5.89	27.32
66429	Analysis	4.13	7.85	6.25	28.25
66542	Analysis	4.12	8.12	5.87	28.98
66636	Analysis	4.11	7.90	5.82	27.70
66709	Analysis	3.92	7.88	6.08	27.56
	Lone Star Brand 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	30.40
66002	Analysis	4.14	11.68	4.21	30.59
66254	Analysis	4.02	11.40	4.28	30.03
66264	Analysis	4.08	11.52	4.16	30.18
66399	Analysis	4.31	11.35	4.64	31.13
66432	Analysis	4.02	11.98	4.12	30.58
66644	Analysis	4.12	11.82	4.58	31.21
66706	Analysis	4.04	11.79	4.26	30.57
66721	Analysis	4.02	11.95	4.47	31.00
	Lone Star Brand 6-8-4 Fertilizer Guarantee.....	6.00	8.00	4.00	30.00
66317	Analysis	5.87	8.49	3.61	29.82
	Lone Star Brand 6-9-3 Fertilizer Guarantee.....	6.00	9.00	3.00	30.00
66001	Analysis	6.03	8.92	3.12	30.13
66058	Analysis	6.01	9.04	3.01	30.08
66255	Analysis	6.09	9.10	3.10	30.48
66286	Analysis	6.00	9.07	3.13	30.26
66365	Analysis	6.04	9.36	3.35	31.03
66466	Analysis	5.90	9.12	3.26	30.26
	Lone Star Brand 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	36.50
65981	Analysis	6.24	9.57	6.75	36.20
65988	Analysis	6.01	9.86	7.18	36.57
65999	Analysis	6.01	9.78	7.09	36.35
66428	Analysis	5.79	9.98	7.05	36.04
66635	Analysis	5.88	9.51	6.74	35.23
66710	Analysis	5.99	9.78	7.31	36.59
	Lone Star Brand 10-10-0 Fertilizer Guarantee.....	10.00	10.00		37.00
66707	Analysis	9.61	10.25		36.39
	Lone Star Brand 20% Kainit Guarantee.....			20.00	26.00

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, Nitrogen	Potash, per cent	Valuation found, per ton
Texas Farm Products Company, Nacogdoches, Texas—Continued					
Lone Star Brand 20% Kanit Guarantee					
Continued—					
66318	Analysis			20.42	26.55
Tri-State Fertilizer and Lumber Co., Shreveport, Louisiana					
	Red Diamond 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	25.20
66047	Analysis	3.91	7.92	4.35	25.34
66385	Analysis	4.22	7.51	4.61	25.88
	Red Diamond 4-10-0 Fertilizer Guarantee.....	4.00	10.00		22.60
66049	Analysis	4.39	10.40		24.06
	Red Diamond 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	30.40
66046	Analysis	4.53	11.49	4.34	31.45
	Red Diamond 6-9-3 Fertilizer Guarantee.....	6.00	9.00	3.00	30.00
66384	Analysis	6.34	7.60	3.80	30.04
	Red Diamond 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	36.50
66386	Analysis	5.73	9.27	7.47	35.51
	Red Diamond 6-12-6 Fertilizer Guarantee.....	6.00	12.00	6.00	37.80
66471	Analysis	6.32	11.11	6.35	37.87
Tyler Fertilizer Company, Tyler, Texas					
	4-8-4 Heart Brand Fertilizer Guarantee	4.00	8.00	4.00	25.20
66078	Analysis	4.40	8.11	4.27	26.65
66518	Analysis	3.67	8.14	3.95	24.53
	4-8-6 Heart Brand Fertilizer Guarantee.....	4.00	8.00	6.00	27.80
66214	Analysis	4.16	7.51	6.36	28.01
66502	Analysis	4.03	8.24	5.48	27.50
	4-8-10 Heart Brand Fertilizer Guarantee	4.00	8.00	10.00	33.00
66215	Analysis	4.11	7.87	9.05	31.86
	4-12-4 Heart Brand Fertilizer Guarantee.....	4.00	12.00	4.00	30.40
66076	Analysis	4.10	11.28	4.25	30.03
66501	Analysis	4.12	11.73	4.30	30.73
	6-8-4 Heart Brand Fertilizer Guarantee.....	6.00	8.00	4.00	30.00
66077	Analysis	6.07	7.72	4.18	30.04
66503	Analysis	5.83	8.98	4.11	31.00
	6-9-3 Heart Brand Fertilizer Guarantee	6.00	9.00	3.00	30.00
66079	Analysis	5.72	7.33	4.30	28.85
66504	Analysis	5.50	8.84	4.20	30.15
	6-10-7 Heart Brand Fertilizer Guarantee	6.00	10.00	7.00	36.50
66075	Analysis	6.13	9.40	7.26	36.37
United Chemical Company, Dallas, Texas					
	Peanut Maker Fertilizer Guarantee.....	3.00	10.00	3.00	24.10
66664	Analysis	3.08	9.38	3.21	23.75
	"Sunset Brand" Fertilizer 3-10-3 Guarantee.....	3.00	10.00	3.00	24.10
66587	Analysis	2.87	10.36	2.70	23.87
	"Sunset Brand" Fertilizer 4-8-4 Guarantee.....	4.00	8.00	4.00	25.20
66234	Analysis	3.94	7.51	3.86	24.24
66397	Analysis	4.04	8.38	4.18	26.02
66500	Analysis	4.08	7.74	4.14	25.23
66611	Analysis	4.04	8.09	3.78	25.13
66686	Analysis	4.06	8.26	4.29	26.06
66779	Analysis	4.10	8.30	3.77	25.53
	"Sunset Brand" Fertilizer 4-12-4 Guarantee.....	4.00	12.00	4.00	30.40
66280	Analysis	4.13	11.04	4.09	29.58
66398	Analysis	4.09	11.62	4.24	30.44
	"Sunset Brand" Fertilizer 6-8-4 Guarantee.....	6.00	8.00	4.00	30.00
66407	Analysis	5.89	8.06	3.86	29.64
	"Sunset Brand" Fertilizer 6-9-3 Guarantee.....	6.00	9.00	3.00	30.00
66112	Analysis	6.02	8.87	3.08	29.98
	"Sunset Brand" Fertilizer 6-10-7 Guarantee.....	6.00	10.00	7.00	36.50
66045	Analysis	5.94	9.28	6.54	34.82
66052	Analysis	6.14	10.05	7.08	37.01
66113	Analysis	6.02	9.57	6.79	35.72
66279	Analysis	6.07	10.28	7.14	37.21
66373	Analysis	6.08	10.13	6.27	35.91

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	valuation found, per ton
United Chemical Company, Dallas, Texas—Continued					
"Sunset Brand" Fertilizer 6-10-7 Guarantee					
Continued—					
66450	Analysis	6.68	9.76	6.11	36.66
66780	Analysis	6.22	9.62	6.71	36.16
"Sunset Brand" Fertilizer 6-12-6 Guarantee					
66044	Analysis	6.00	12.00	6.00	37.80
66050	Analysis	6.00	11.51	6.08	37.26
66230	Analysis	6.08	11.83	5.75	37.41
66427	Analysis	6.19	11.64	6.16	38.00
66462	Analysis	6.07	11.40	6.04	37.24
	Analysis	6.11	12.18	5.55	37.71
"Sunset Brand" Fertilizer 18% Superphosphate					
	Guarantee		18.00		23.40
66463	Analysis		20.54		26.70
"Sunset Brand" Fertilizer Truck & Fruit Special 4-8-6					
	Guarantee	4.00	8.00	6.00	27.80
66051	Analysis	4.13	7.39	5.29	26.40
66114	Analysis	3.85	7.51	5.70	26.41
66155	Analysis	3.95	7.63	5.29	26.28
66402	Analysis	4.00	7.87	5.32	26.75
66617	Analysis	4.07	7.81	5.45	27.01
"United Plantfood" 3-10-3 Guarantee					
66235	Analysis	3.00	10.00	3.00	24.10
66580	Analysis	3.02	9.97	2.84	23.90
	Analysis	2.98	10.03	3.00	24.09
"United Plantfood" 4-8-4 Guarantee					
66409	Analysis	4.00	8.00	4.00	25.20
66686	Analysis	3.90	7.81	3.73	24.36
66791	Analysis	4.06	8.26	4.29	26.06
	Analysis	4.19	9.01	3.62	26.48
"United Plantfood" 4-8-6 Guarantee					
66239	Analysis	4.00	8.00	6.00	27.80
66290	Analysis	4.01	8.11	6.32	28.38
66408	Analysis	3.88	8.03	5.86	27.37
	Analysis	4.03	8.07	5.46	27.26
"United Plantfood" 4-12-4 Guarantee					
66017	Analysis	4.00	12.00	4.00	30.40
66238	Analysis	4.06	12.03	3.81	30.33
66244	Analysis	4.02	11.01	4.04	29.21
66258	Analysis	4.02	11.11	4.04	29.34
66296	Analysis	4.02	12.04	3.65	30.05
66442	Analysis	4.19	12.00	3.78	30.57
66444	Analysis	4.02	12.71	4.05	31.44
	Analysis	4.00	10.82	3.92	28.77
"United Plantfood" 6-9-3 Guarantee					
66236	Analysis	6.00	9.00	3.00	30.00
	Analysis	6.07	9.07	3.11	30.40
"United Plantfood" 6-10-7 Guarantee					
66237	Analysis	6.00	10.00	7.00	36.50
	Analysis	6.00	10.09	6.54	36.02
"United Plantfood" 6-12-6 Guarantee					
66297	Analysis	6.00	12.00	6.00	37.80
	Analysis	6.03	12.49	5.82	38.28
"United Plantfood" 18% Superphosphate Guarantee					
66232	Analysis		18.00		23.40
	Analysis		18.27		23.75
Virginia-Carolina Chemical Corporation, Shreveport, La.					
Manure Salts 30% Guarantee					
66322	Analysis			30.00	39.00
	Analysis			30.88	40.14
V-C Blood, Bone and Potash Guarantee					
65959	Analysis	3.00	10.00	3.00	24.10
66371	Analysis	3.08	9.29	3.32	23.79
	Analysis	3.09	9.42	3.08	23.67
V-C Fertilizer 3-10-3 Guarantee					
66579	Analysis	3.00	10.00	3.00	24.10
66630	Analysis	3.13	10.20	3.02	24.70
66671	Analysis	3.09	10.24	3.37	25.11
	Analysis	3.08	10.05	3.50	25.01
V-C Fertilizers 4-8-4 Guarantee					
66152	Analysis	4.00	8.00	4.00	25.20
66310	Analysis	4.03	8.32	3.86	25.51
66321	Analysis	3.93	8.17	4.12	25.41
	Analysis	4.05	8.04	4.17	25.59

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Virginia-Carolina Chemical Corporation, Shreveport, La.—Continued					
V-C Fertilizer 4-8-4 Guarantee					
Continued—					
66367	Analysis	4.02	8.11	4.02	25.42
66389	Analysis	3.99	7.44	3.99	24.44
66465	Analysis	4.16	7.78	4.05	25.36
66529	Analysis	3.87	7.88	4.03	24.77
66549	Analysis	4.06	8.46	3.84	25.73
66563	Analysis	3.93	8.03	3.81	24.82
66574	Analysis	4.06	8.73	3.80	26.03
66609	Analysis	4.16	8.21	4.09	25.97
66628	Analysis	4.08	8.48	4.03	26.05
66676	Analysis	4.07	8.04	3.97	25.38
V-C Fertilizers 4-8-6 Guarantee					
66043	Analysis	4.00	8.00	6.00	27.80
66064	Analysis	4.16	7.64	6.03	27.5
66157	Analysis	4.07	8.00	5.78	27.68
66217	Analysis	4.12	7.42	5.74	27.00
66311	Analysis	4.13	7.72	6.16	27.96
66550	Analysis	3.87	6.98	5.81	25.91
66573	Analysis	4.04	8.24	6.02	28.24
66610	Analysis	3.97	8.03	5.90	27.64
66677	Analysis	4.27	8.34	5.56	28.32
V-C Fertilizers 4-12-4 Guarantee					
66004	Analysis	4.02	8.34	5.77	27.99
66062	Analysis	4.00	12.00	4.00	30.49
66320	Analysis	3.96	12.14	4.25	30.81
66366	Analysis	4.00	11.88	4.20	30.50
66388	Analysis	4.11	12.45	4.08	31.35
66497	Analysis	4.11	11.89	4.02	30.55
66562	Analysis	4.23	12.09	4.00	31.07
66711	Analysis	4.29	12.34	4.01	31.55
66713	Analysis	4.08	12.29	4.07	31.06
66766	Analysis	4.21	12.78	4.01	31.92
V-C Fertilizers 6-8-4 Guarantee					
66081	Analysis	4.11	12.83	3.78	31.45
66511	Analysis	3.87	12.21	3.80	30.10
66608	Analysis	6.00	8.00	4.00	30.00
V-C Fertilizers 6-8-8 Guarantee					
66370	Analysis	5.91	8.01	4.24	30.10
V-C Fertilizers 6-9-3 Guarantee					
66080	Analysis	5.94	8.53	4.02	30.58
66512	Analysis	6.02	8.44	4.03	30.66
V-C Fertilizers 6-10-7 Guarantee					
65958	Analysis	6.00	8.00	8.00	35.20
66003	Analysis	5.84	8.54	7.47	34.83
66035	Analysis	6.00	9.00	3.00	30.00
66156	Analysis	6.00	9.50	3.32	31.07
66216	Analysis	5.77	9.40	3.29	30.35
66308	Analysis	6.00	10.00	7.00	36.50
66396	Analysis	6.02	9.37	7.07	35.82
66451	Analysis	6.09	10.30	7.03	37.15
66712	Analysis	6.15	10.19	7.08	37.21
V-C Fertilizers 6-12-6 Guarantee					
66042	Analysis	5.96	9.94	6.76	36.01
66063	Analysis	6.08	10.09	7.16	37.02
66420	Analysis	5.92	9.94	7.01	36.24
66464	Analysis	6.04	9.80	6.70	35.95
66541	Analysis	6.02	9.75	6.72	35.87
66629	Analysis	6.01	9.81	6.77	35.97
66678	Analysis	6.00	12.00	6.00	37.80
V-C Fruit and Truck Special Guarantee					
66421	Analysis	5.98	12.22	6.25	38.37
		5.90	12.28	6.06	38.00
		5.96	12.10	6.38	38.32
		6.08	12.24	6.26	38.64
		6.13	12.54	6.04	38.89
		5.94	12.39	5.81	37.92
		6.08	12.33	5.88	38.26
		6.00	10.00	7.00	36.50
		5.94	10.15	6.85	36.37

Table 10. Analysis of commercial fertilizer, season 1940-41

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	per ton Valuation found,
Virginia-Carolina Chemical Corporation, Shreveport, La.—Continued					
V-C Fruit and Truck Special Guarantee—Continued					
	V-C Potato Special Guarantee	4.00	8.00	10.00	33.00
65961	Analysis	3.93	7.78	9.37	31.72
66181	Analysis	4.06	8.45	9.28	32.79
66309	Analysis	3.97	8.49	9.88	33.41
66496	Analysis	4.03	9.31	8.26	32.51
	V-C Truckers Special Guarantee.....	4.00	8.00	6.00	27.80
65960	Analysis	4.03	7.83	6.06	27.73
66182	Analysis	4.02	8.07	5.84	27.73
	V-C 18% Superphosphate Guarantee		18.00		23.40
66670	Analysis		19.53		25.39
Waldo Fertilizer Works, Waldo, Arkansas					
	Victor 4-8-4 Guarantee.....	4.00	8.00	4.00	25.20
66376	Analysis	3.84	8.25	4.12	25.31
	Victory 4-8-6 Guarantee	4.00	8.00	6.00	27.80
66375	Analysis	3.80	7.78	6.34	27.47
Charles F. Ward, San Antonio, Texas					
	Grasstonia Fertilizer Guarantee.....	8.00	7.00	3.50	32.85
66796	Analysis	10.45	9.75	4.17	43.13
	Thriftyer Fertilizer Guarantee	5.00	9.00	4.00	28.90
66797	Analysis	5.37	10.38	4.51	32.24
	Vita-Gro-Glo Fertilizer Guarantee.....	6.00	10.00	4.00	32.60
66795	Analysis	8.91	11.21	3.61	40.64